

WILDLIFE CONSERVATION SOCIETY

ANNUAL  
REPORT

2006

WILDLIFE  
CONSERVATION  
SOCIETY





A misty, rocky landscape with a body of water in the background. The scene is hazy, with soft light filtering through the fog. The foreground is filled with large, light-colored rocks and some sparse vegetation. In the distance, a calm body of water stretches towards a hazy horizon. The overall mood is serene and natural.

# ON ALL FRONTS

The Wildlife Conservation Society saves wildlife and wild lands worldwide. We do so through science, global conservation, education, and the management of the world's largest system of urban wildlife parks, led by the flagship Bronx Zoo. Together, these activities change individual attitudes toward nature and help people imagine wildlife and humans living in harmony. WCS is committed to this mission because it is essential to the integrity of life on Earth.

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WCS's engaging wildlife collections in five parks enable millions of guests each year to appreciate the wonderful layers of life in the natural world.

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WCS staff are involved on the ground in the most remote and difficult places around the globe, working with strategic partners and local people.

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**Cover:** The African wild dog symbolizes the Wildlife Conservation Society's commitment to save wildlife and wild lands around the world. **Inside front cover:** a radiated tortoise in southern Madagascar. **Right:** a North American porcupine at the Queens Zoo











One hundred years ago, the Bronx Zoo played a crucial role in saving our native iconic species, the American bison. It is my fervent hope that the bison, the wild dog, and all other species currently roaming our planet Earth will remain extant another century from now, as the threats today from the demands of burgeoning human populations and global climate change are intensely real.

Can the human race adapt to ever changing circumstances? Will there be adequate supplies of water, permitting life on Earth to continue as we have known it? Can a world population that exceeds 6.5 billion people learn restraint? Can energy, ever more in demand, be produced, harnessed, furnished, and utilized in an efficient fashion that encourages environmental sustainability?

Flora, fauna, and human beings will be deeply affected by population growth, climate change, and disease. These are perilous times, and the lives of future generations depend on the actions we take today.

With 111 years of accumulated knowledge, WCS is especially well informed to proceed intelligently and effectively. We comprehend, reasonably well, how animals and habitats interact; we understand, reasonably well, the interdependency of people and their habitats, whether urban or rural; and we fight, every day, to improve the lives of people in the places where we work. We work to conserve nature. For without nature, people cannot thrive. Protecting biodiversity is crucial to human welfare.

Our uniqueness—our zoos and aquarium, our 155 plus scientists

who apply their skills across the globe from Sarawak to Congo to Karukinka to Yellowstone, our health and education expertise and programs, and our marine and terrestrial capability—all inspire our efforts to help preserve the planet Earth. We work to mitigate the huge illegal trade in wildlife, to stem the monstrous bushmeat crisis, to preserve our precious jungles, prairies, rivers, and oceans despite the intrusion of loggers, fishermen, and other industries, and to keep watch on zoonotic diseases and their spread from place to place (or airport to airport).

As we embark on our urgent and momentous *Gateways to Conservation* campaign (see page 11), you, our donors and supporters, I thank in advance. Stay the course and help us preserve the environment.



## Partners, Friends, and Supporters

### BEST FRIENDS

The Wildlife Conservation Society is enormously grateful to Robert W. Wilson for his magnificent, sustained support of our global conservation programs, with matching grant funds that this year totaled more than \$16 million. This extraordinarily generous challenge match continues to help us secure vital new support for our conservation work around the world.

We extend special appreciation to C. Diane Christensen, who made an outstanding commitment this year that will help secure the future of WCS's global conservation programs. We also offer our deepest thanks to Panthera, supported by J. Michael and Pamela Cline and the Family of Thomas S. Kaplan, for a marvelous suite of gifts that will provide critically important funding for our work to ensure the continued survival of lions, tigers, and jaguars in the wild.

We are deeply indebted to the Goldman Sachs Charitable Fund, Inc. for its ongoing operating and endowment support of the Karukinka and Beyond program. We are honored to continue to work with the Fund to protect and preserve its extraordinary gift of more than 680,000 acres of land on the Chilean portion of the island of Tierra del Fuego and to advance other critically important elements of our conservation efforts in South America. We are tremendously grateful for, and look forward to the future of, this remarkable partnership.

WCS is enormously thankful for the dedication and generosity of these friends who have each made contributions totaling one million dollars or more this year:

- Eleanor Briggs, for her sustained support of our global conservation programs, including a steadfast commitment to the expansion of our work in Cambodia.
- Liz Claiborne/Art Ortenberg Foundation, for its long-standing support of innovative conservation projects around the world.
- Jonathan L. Cohen, for operating and endowment support that helps secure the current activities and strengthen the future of our Living Institutions.
- Consolidated Edison Company of New York, for significant new funding and ongoing support for a broad range of programs and activities.
- Edgar and Louise Cullman, for an exceptional commitment that will help us meet a number of key challenges as we look to the future.

**Right: Larry Linden, advisory director and former general partner, Goldman, Sachs & Co., attended a WCS-sponsored conference for ecological restoration of the American bison.**

- The Doris Duke Charitable Foundation, for its significant support of our work with other conservation organizations dedicated to preserving wildlife across North America.
- Valerie Gates, for her continuing commitment to the conservation of bears.
- Darlene and Brian Heidtke, for their outstanding support of our Field Veterinary program and our efforts to ensure the continued strength of WCS staff around the world.
- The John D. and Catherine T. MacArthur Foundation, for its sustained commitment to our conservation efforts in some of the world's most ecologically diverse and vulnerable landscapes.
- Edith McBean, for her outstanding support of our global conservation programs and our conservation scientists around the world.
- Ambrose Monell, for supporting the construction of the new Pathology Laboratory Suite in our Wildlife Health Center.
- Gordon and Betty Moore Foundation, for its continued commitment to our work in large landscapes in the Amazon and Fiji.
- Caroline N. Sidnam and Pamela Thye, for their continuing support of our Wildlife Health Sciences program, including a gift to fund the new Clinical Laboratory in our Wildlife Health Center.
- Allison and Leonard Stern, for their renewed support of our federal outreach and advocacy efforts.
- Ward W. and Priscilla B. Woods, for their vital support of our conservation programs around the world.



In a simpler time, perhaps, conservation meant preservation of wild animals in vast expanses of natural habitat. The twentieth century put an end to such possibilities, with agricultural and industrial expansion, massive deforestation, and marine exploitation without limit.

Today's world requires all conservationists to broker broad alliances that will ensure the future of wildlife in a much smaller protected area estate, where management plays a much more powerful role, and humans are almost always present. Conservation in our time means the human management of wild nature. National governments, the international community, private groups, public nonprofit organizations, and individual citizens must coalesce for this compelling goal.

The Wildlife Conservation Society is uniquely positioned in the world of conservation, undertaking a mission to preserve natural and human diversity in the farthest corners of the Earth. With more than a century of scientific and practical legacy supporting us, we now launch *Gateways to Conservation*, an international campaign to open wildlife conservation action to the worlds of public health, education, scientific curatorship, and public inspiration.

Such lofty purpose means little without concrete commitments and effective action. *Gateways to Conservation* means working with diplomats and scientists to relocate a snow leopard cub from Pakistan to the fabled Bronx Zoo, and working with our colleagues in Pakistan to conserve its offspring and others of its kind in the wild. It means conservation biologists and wildlife veterinarians working with human communities in the Republic of Congo to create one of the most extensive national parks systems in sub-Saharan Africa and to develop Ebola vaccines for both gorillas and humans. *Gateways to Conservation* requires that the Bronx Zoo's new African Wild Dog exhibit impel efforts to finance and conserve the three viable wild dog populations that remain in Africa.

Other examples abound: teachers from Bhutan and Tierra del Fuego winning fellowships to New York and returning home with wildlife conservation curricula for their schools; long-term leadership training for colleagues from



The Wildlife Conservation Society is uniquely positioned in the world of conservation, undertaking a mission to preserve natural and human diversity in the farthest corners of the Earth.

developing countries; innovative private financing for Tigers Forever, a program to save these big cats throughout their range countries of Asia; a Global Avian Influenza Network of Surveillance (GAINS), linking public health agencies, wildlife experts, veterinarians, and research institutes to ensure that wildlife, domestic animal, and human health are protected.

The first great Gateway is the stunning bronze Rainey Gate at the entrance to the Bronx Zoo. Built around wildlife themes and evocative in its scale and power, it is a fitting image for a campaign for this century—not only representing conservation, but also embodying its catalytic role throughout societies worldwide, in defense of a world in which humans and wildlife live together sustainably. Join us. This is a campaign that must be won.



## Partners, Friends, and Supporters

In addition to those named on page 5, we extend special thanks to those donors who generously supported WCS and its mission.

### SUPPORT ACROSS WCS

WCS deeply appreciates those donors who have provided significant unrestricted support, enabling us to allocate funds where the need is greatest. We are grateful to Katharina Otto-Bernstein, Mrs. John Elliott, Jr., Teresa and Robert Lindsay, The Howard Phipps Foundation, Josie and Julian Robertson, and The Starr Foundation. In addition, WCS is grateful for unrestricted support received from the Edwin F. Gamble Charitable Lead Trust and the estates of Dr. Ezra Kulko, Frances Leventritt, Ann Luana Martinez, Edwin L. Weyer, Martha Daly Wolfson, and Ida Wood.

We recognize those philanthropists who during the year provided program support for our zoos and aquarium in New York and our global conservation programs around the world. Our gratitude goes to the Irwin Family, The New York Community Trust, Edward John Noble Foundation, Inc., the Schiff Family, and Daniel K. Thorne Foundation, Inc.

### LIVING LANDSCAPES

Our global conservation field programs, as well as our cross-cutting programs headquartered in New York, received significant support from many generous donors.

We extend special thanks to Nancy Abraham and Arnold Moss, BP International, Conservation International–Global Conservation Fund, Dana and Lawrence Linden, Mr. and Mrs. George K. Moss, National Fish and Wildlife Foundation, National Geographic Society, The David and Lucile Packard Foundation, Pattee Charitable Lead Trust, The Tinker Foundation, Inc., World Wildlife Fund, and two anonymous donors.

Our conservation efforts across Africa also received vital support from Conservation International–Critical Ecosystem Partnership Fund, and Zoo Zurich.

The Homeland Foundation, Inc./E. Lisk Wyckoff, Jr. and Unocal Foundation provided generous funding for our conservation work in Asia.

Our Latin America Program received vital additional support from Wallace Global Fund.

Our Marine Program is grateful for significant support from Kerzner Marine Foundation, The Summit Foundation, and The Tiffany & Company Foundation.

Our conservation work in North America also benefited from the generosity of Shell Exploration & Production Company, Laura Moore Cunningham Foundation, and Wilburforce Foundation.

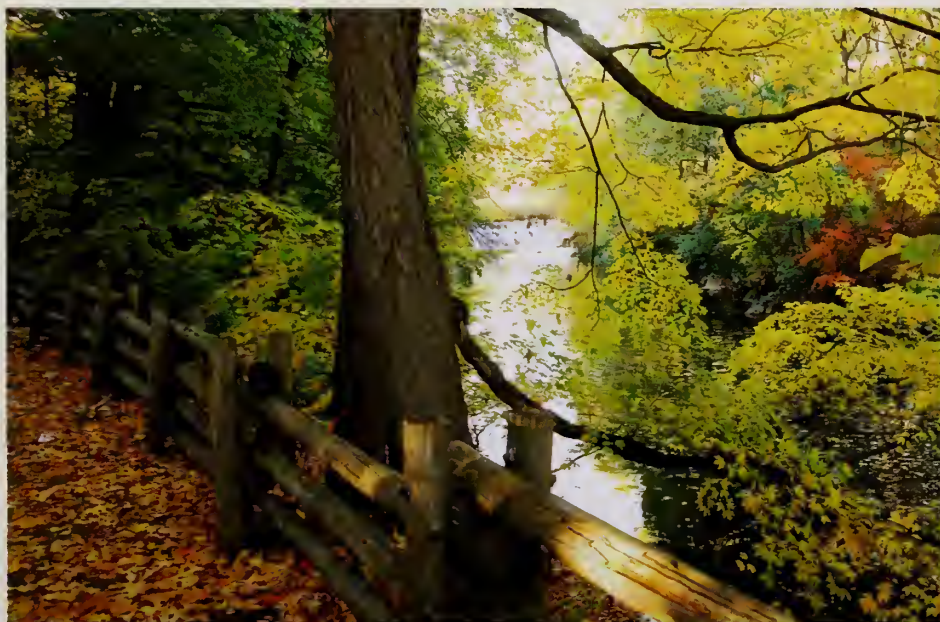
### LIVING INSTITUTIONS

We are grateful to those donors who provided support for our zoos and aquarium, recognizing the need to maintain the health and enhance the well-being of our living collections, build state-of-the-art exhibits, and educate the public about the importance of wildlife conservation.

Our programs in Wildlife Health received vital support from Francis Goelet Trust for work done internationally through our Field Veterinary program.

WCS deeply appreciates those donors who have provided support for our exhibits. The Bronx Zoo's upcoming *Madagascar!* exhibit received important assistance from Cleveland H. Dodge Foundation, Inc. Mitsubishi International Corporation Foundation provided ongoing support for Mitsubishi Riverwalk at the Bronx Zoo.

WCS's Education Program benefited from the generosity of The Charles Hayden Foundation, William Randolph Hearst Foundation, the Nancy G. and C. Richard MacGrath Fund of The New York Community Trust, and The New York Times Company Foundation.





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## City Support

WCS is grateful to the City of New York, which provides significant operating funds through the Department of Cultural Affairs and the Department of Parks and Recreation. We thank Mayor Michael R. Bloomberg, City Council Speaker Christine C. Quinn, Bronx Borough President Adolfo Carrión, Brooklyn Borough President Marty Markowitz, Queens Borough President Helen Marshall, Councilmember Joel Rivera, Majority Leader, Councilmember Domenic M. Recchia, Jr., Chair, Cultural Affairs, Libraries & International Intergroup Relations Committee, and the entire New York City Council for their support of capital projects. The elected officials of the City of New York are vital to the public/private partnership on which WCS's service to the people of New York rests.



Opposite: WCS Board of Trustees, spring 2006. Right: Herpetology Keeper Alyssa Borek with a hatchling turtle in the Bronx Zoo's World of Reptiles.









# GATEWAYS TO CONSERVATION

The Wildlife Conservation Society (WCS) has set the standard for effective conservation action for more than a century. WCS saves wildlife and wild lands across the globe through conservation action, science and education, and through the management of the world's largest system of urban wildlife parks, headquartered at the Bronx Zoo. Together, these activities change individual attitudes toward nature and help people imagine wildlife and humans living in sustainable interaction on both a local and a global scale.

As the “human footprint” on the planet expands and threats to wildlife increase, WCS must keep pace with the changing environment by making parallel organizational changes. Ensuring the future of wildlife and wild lands over the next century poses great challenges, but also presents us with an opportunity to build on our heritage with a new program of action. WCS's integrative mission of curating and conserving wildlife and wild lands provides us with a unique platform to achieve sustainable successes in conservation and scientific discovery and to enhance life on Earth.

Gateways to Conservation will invigorate our institution as a New York cultural icon, a beacon of environmental learning, an unparalleled exhibition of wild animals, a center for holistic wildlife and human health, and a leader in science and global conservation.

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Gateways to Conservation is WCS's largest and most comprehensive fundraising endeavor to date. Through the course of this campaign, WCS will evolve from an institution with a great history into one with a greater future. The Gateways to Conservation Campaign will build upon our long and distinguished history of achievement and enhance science, discovery, animal well-being, and the conservation of the wild.



# *living* INSTITUTIONS

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**E**very morning, in four boroughs of New York City, WCS employees throw open the gates of the five Living Institutions to welcome guests to the Bronx, Central Park, Prospect Park, and Queens Zoos, and the New York Aquarium. Thanks to the coordinated efforts of dedicated staff, once guests pass through these gates, they are guaranteed exciting explorations, inspired by the animal ambassadors who represent all the other species with whom we share the planet. Unrivaled in the zoological community, the WCS Living Institutions bring together curatorial and keeper excellence in animal care and husbandry, scientific leadership in veterinary medicine and animal enrichment, superior landscape architecture and horticulture, topflight guest services, and







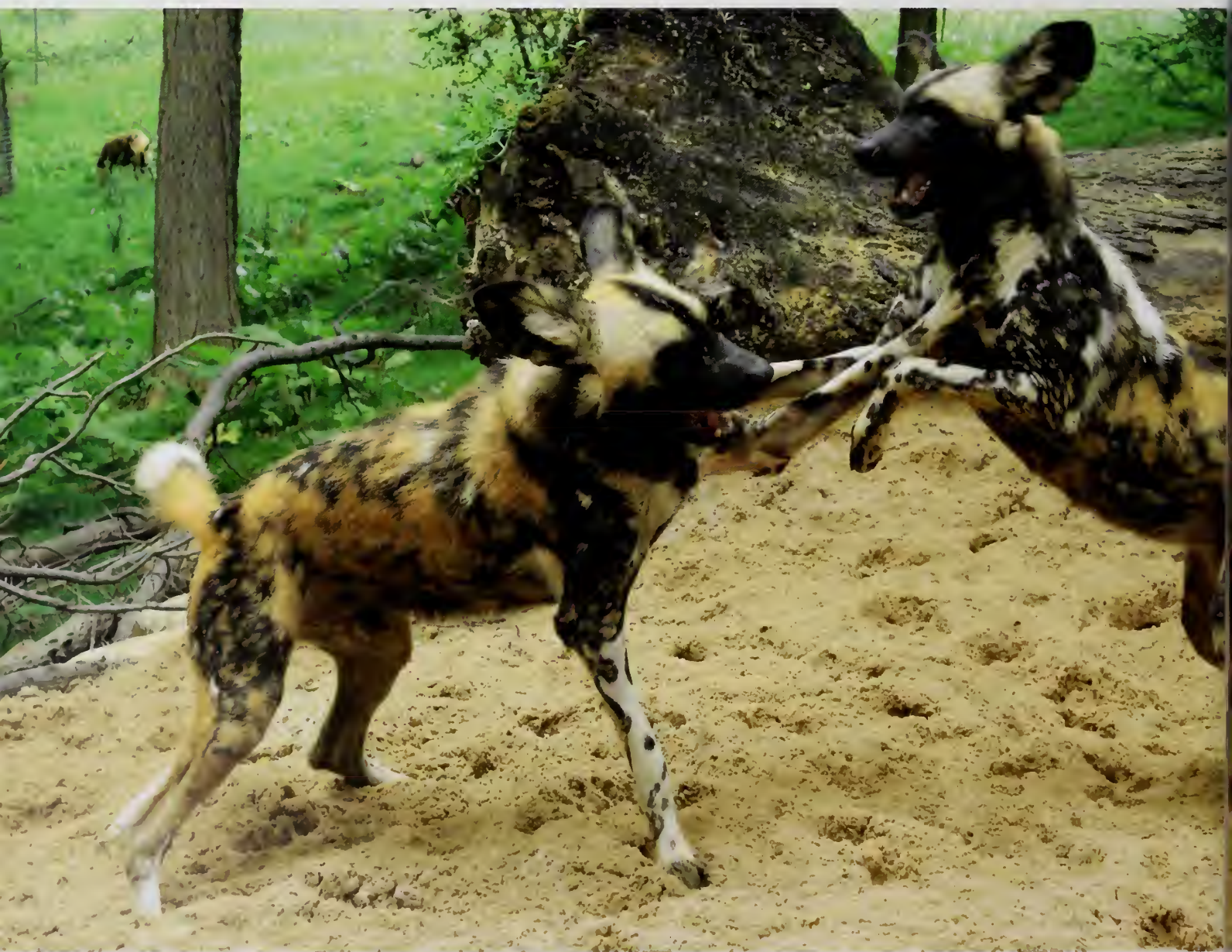


state-of-the-art exhibits. A ticket to any of the zoos and the aquarium is a key to adventure and up-close exposure to wild animals in naturalistic settings.

In addition to comprising the largest system of urban wildlife parks in the world, the Living Institutions are part of an extensive, global conservation organization, one that carries out its mission—to save wildlife and wild lands—at its headquarters in New York and in the field every day. In a boisterous example, the Bronx Zoo went to the dogs this year—African wild dogs, a critically endangered canid. In mid-June, the pack of 20 burst out into the new exhibit on the African Plains, greeting and inspecting the neighboring cheetahs and giraffes. A large, rustic, glass-fronted log pavilion, reminiscent of a field station in Kenya, showcases the highly social nature of these unflag-

gingly energetic carnivores. Just as they would do in the wild, the dogs yip, race, roll, dig, swim, nip at and chase each other, play tug of war, and more. Multiple animal enrichments built into the exhibit include a digging pit and a feeder at which the dogs use their natural instincts to work together in order to release a treat. An instant hit with visitors, the exhibit, with perhaps the largest pack of African wild dogs in any zoo, displays WCS efforts at the Zoo and in the field to save this charismatic canid. Due to diseases, eradication as pests, and habitat destruction, the total wild population has declined to fewer than 5,000 dogs, found only in small sections of Kenya, Botswana, and Tanzania.

Bronx Zoo Mammal Curator Pat Thomas, Clinical Veterinarian Bonnie Raphael, and Field Conservation-





ist Rosie Woodroffe have joined forces to develop vaccine protocols for distemper and rabies, which can pass from domestic to wild dogs. The study focuses on the efficacy of vaccines in the Zoo's dog population, and compares immune responses to vaccines administered orally and by injection. After the results are analyzed, the project will move to northern Kenya to evaluate oral vaccine delivery methods for wild populations.

In another example of close collaboration with WCS International Conservation colleagues, Thomas launched a study to determine the passage rate of "prey" fur through the digestive tract of Bronx Zoo leopards. If this research can determine how long hair from a meal persists in scat, Director of the WCS Big Cat Program Luke Hunter and his team may be able to use the same technique to

figure out how many cattle leopards in South Africa are really killing and eating as they travel across farms.

Meanwhile, construction proceeded apace on the Bronx Zoo's landmark Lion House, which is being transformed into the extraordinary exhibit *Madagascar!* and a new public space. Both are slated to open in 2007. Timed to re-open simultaneously, the adjacent Astor Court is undergoing a major renovation. An environmentally-friendly sea lion pool will save thousands of gallons of water, and the refurbished courtyard will restore the heart of the Bronx Zoo to its original luster.

The WCS commitment to green design in current and future building plans achieved recognition with two prestigious awards. The Lion House received a New York City Green Building Award, given by the NYC Department of



Opened in 1985, the Bronx Zoo's JungleWorld re-creates an Asian rain forest, with mangrove swamp and scrub forest. One of the most ambitious indoor zoo exhibits, it features 780 animals—such as the young silvered leaf monkey on page 13. This year, the Zoo opened its latest exhibit—for African wild dogs (far left). WCS Field Conservationist Rosie Woodroffe and Bronx Zoo Mammal Curator Pat Thomas (left) are collaborating on a project to develop distemper and rabies vaccine protocols for these highly endangered canids. Below: Youngsters from project T.I.G.E.R. (Together In Getting Everyone Reading, with Community Region One, Community School Districts 9 and 10) attended the opening.



# The Bronx Zoo's success in captive breeding of gorillas produced four babies this year, bringing the total number of gorilla births since 1972 to an impressive 57. This program is the most extensive in the United States.

Environmental Protection and the U. S. Environmental Protection Agency for its design and environmental excellence. The Center for Global Conservation, a "green" office building now in design, received an award for design excellence from the NYC Art Commission.

James Breheny, who has worked with WCS for more than 30 years, was promoted from General Curator to Vice President, Director of the Bronx Zoo. Only eight other individuals have held that position since the Zoo opened in 1899. David Powell finished his two-year curatorial science fellowship with the Mammal Department and was appointed Assistant Curator, Hoofstock. The WCS Curatorial Science Fellow program is the only one of its kind in North America. It offers post-doctoral candidates innovative professional instruction in animal husbandry and hands-on experience, while they further their own research and develop administrative skills.

The Bronx Zoo's success in captive breeding of gorillas produced four babies this year, bringing the total number of gorilla births since 1972 to an impressive 57. This program is the most extensive in the United States. WCS expertise with primates was called upon by the global community when Primate Curator Colleen McCann joined forces with WCS International colleagues and researchers at Limbe Wildlife Centre, a wildlife rehabilitation facility in Cameroon. McCann is part of a team addressing the growing number of orphaned primates at Limbe, and is helping to develop a number of projects, including a keeper exchange program between Limbe and WCS.

The Bronx Zoo holds the distinction of being the first North American zoo to successfully breed lesser adjutant storks. This year, the Ornithology Department welcomed two new chicks. Another very notable addition was a new off-exhibit conservation building, located behind the World of Birds. The facility provides breeding space for the endangered maleo of Indonesia, which also produced chicks this year. The Bronx Zoo has the only captive ma-

leos outside Indonesia. Guam kingfishers, which are extinct in the wild, also bred in the new building. Equipped with a state-of-the-art camera system that enhances the Department's ability to manage the collection, the conservation building is off to a flying start!

Bright and bold new graphic panels in the upper gallery of the World of Birds highlight the Department's years of leadership in helping to save critically endangered species. Colorful kiosks relate the simple steps visitors can take close to home that can help save birds around the world.

The New York Bird Monitoring Program in Bronx Park analyzed data obtained the previous year. The results suggest that the zoo grounds provide an important stopover site for birds migrating through the New York metropolitan area. Prior to the study, the importance of stopover sites often had been overlooked in conservation strategies for neotropical migratory birds.

At the behest of the Tanzania government, WCS signed a Memorandum of Understanding allowing the Bronx Zoo Herpetology Department to continue its captive-breeding program for Kihansi spray toads. This critically endangered species is all but extinct in the wild. Tanzanian dignitaries came to see the tiny toads, some of which are the population's third generation. Long-term goals include an eventual release into the Kihansi River Gorge and establishment of a captive-breeding colony in Tanzania. Both projects are to be spearheaded by Bronx Zoo staff.

**Opposite: Bronx Zoo guests can get this close (via huge glass walls) to western lowland gorillas at Congo Gorilla Forest. This 6.5-acre African habitat is a gateway that explains what a rain forest is, how it works, which animals make it their home, why it is threatened, and how people can help save it. WCS is the only organization in the world working to protect all three gorilla subspecies: mountain gorillas, Grauer's gorillas, and western lowland gorillas.**





In another instance of the international community requesting WCS expertise, Herpetology Department Collection Manager Bill Holmstrom helped Myanmar's Yadana-bon Zoo, in Mandalay, with plans for a captive-breeding facility for the Burmese roofed turtle. Experts previously believed this freshwater species had become extinct, until several turtles were discovered in Mandalay in 2002.

Back in New York City, Guest Services implemented technological advances in ticketing for group sales that improve efficiency in admitting visitors to the Bronx Zoo and the New York Aquarium more quickly and significantly cut operating expenses. In addition, the Department secured attendance-driving relationships with more than 60 major corporations. These corporate employees can go online at home to purchase and print discounted tickets to the Zoo or the Aquarium.

In addition, Guest Services implemented a Spanish language map to the Bronx Zoo, an updated access map for guests with disabilities, assisted listening devices at the Wild Asia Monorail and at the *Saving Africa's Forests* film in Congo Gorilla Forest, and a new Skyfari car with improved wheelchair access.

Guest Services also took charge of the Bronx Zoo Safari Greeters and piloted a Safari Guides program in partnership with the animal departments. Guides wear the same bright red shirts as the Greeters and are situated at exhibits during keeper enrichment and training sessions. The Guides provide information and interpretation for visitors about the animals and the behaviors they are seeing. This program will grow, thanks to a generous grant from the National Science Foundation.

Dan Wharton, Director of the Central Park Zoo





The Bronx Zoo is the first zoo in North America to breed lesser adjutant storks. This year the Bird Department welcomed two chicks (below, far left) in the new aviary. The Herpetology Department met with Tanzanian delegates and colleagues (below) to discuss the future of the Kihansi spray toad project. These tiny toads (right, an adult and a hatchling) have all but disappeared along with their native habitat. The Bronx is one of several American zoos breeding them.







Guest Services took charge of the Bronx Zoo's Safari Greeters and Guides program. These staff members (above) provide guests with information on animals, exhibits, and enrichment programs. Work continued on the Zoo's landmark Lion House building, creating the spectacular new *Madagascar!* habitat (left), which is scheduled to open in 2007. Meanwhile, the Hamadryas baboon family kept growing at Prospect Park Zoo (above, right).



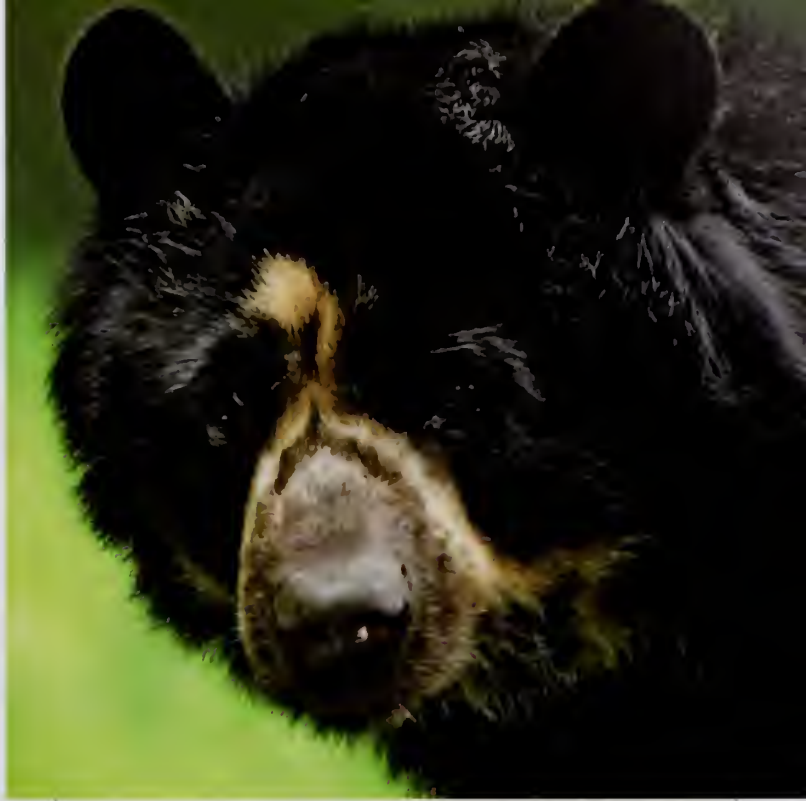


(CPZ), received a grant from the National Endowment for the Arts to appoint a Poet-in-Residence for the Living Institutions for one year. Nationally renowned poet and scholar Sandra Alcosser expanded her role from an earlier Institute of Museum and Library Services (IMLS) grant as Poet-in-Residence at Central Park. She is helping the Exhibition and Graphic Arts Department (EGAD) integrate conservation-oriented poetry in all five parks. The permanent installation of poetry at CPZ is another effective way to connect visitors to wildlife and conservation issues.

IMLS also awarded Director of Interpretive Programs John Fraser one of the largest grants in its history, to undertake primary research into the culture and value of zoos (see sidebar, page 22).

At the New York Aquarium, design is under way for a state-of-the-art shark exhibit. Staff and consultants are working in conjunction with the NYC Economic Development Corporation, the NYC Department of Cultural Affairs, and other City agencies to create an architectural structure that corresponds with the Coney Island Development Corporation's vision for the revitalized boardwalk area and community.

Paul Loiselle, Curator of Freshwater Fishes and one of the world's leading research ichthyologists, lent his peerless expertise about Madagascar fishes to the development of *Madagascar!*, the exhibit. Freshwater fishes of Mada-



## Enriching the Global Community

The WCS Living Institutions, world leaders in the science of animal enrichment, have created an Enrichment Outreach Program (EOP). This gateway to conservation links wild animal keepers around the globe by educating them about animal enrichment and its benefits to the wildlife in their care.

Initially, the EOP is focusing on Latin American zoos and aquariums. A pilot program, launched in Venezuela and Colombia in 2005, provided animal keepers in those countries with instruction on how to develop a foundation for successful enrichment programs at their facilities. Those workshops—conducted by Queens Zoo Wild Animal Keeper David Morales, QZ Assistant Supervisor Mark Hall, and Bronx Zoo Senior Wild Animal Keeper Jose Vasquez—were based on training and enrichment manuals developed by Martha Hiatt, a behavioral enrichment supervisor based at the Aquarium.

This year, WCS brought its animal enrichment expertise to the 13th Annual Congress of the Latin American Association of Zoos and Aquariums, in Argentina. The staff held a four-day workshop at the Temaiken Zoo, and met with zoo biologist Vanessa Astore at the Buenos Aires Zoo to follow up on her enrichment work with spectacled bears (above). Suggestions were made for implementing and enhancing enrichment programs for other animals at the Buenos Aires Zoo.

The EOP's approach of directly linking WCS keepers with their peers has helped get the program off to a strong start. The ultimate goal is to help improve animal husbandry standards around the world.





## Setting a New Standard for Metrics

WCS has a long history as one of the few zoological organizations with in-house expertise in conducting research on the guest experience, and in using the results to guide the creation and development of new exhibits and programs. Now, thanks to one of the largest grants in the history of the Institute of Museums and Library Services (IMLS), a newly formed social science research group is undertaking a three-year study to examine why people visit zoos and aquariums. The project operates out of the Living Institutions at the Bronx Zoo under the leadership of John Fraser, Director of Interpretive Programs, with Research Associate Jessica Sickler and a group of graduate student interns. The team is working with a 14-person advisory panel drawn from WCS senior management, and is seeking to define the perceived value of zoos and aquariums to the general public as well as assess how personal values regarding wildlife relate to the zoo and aquarium experience. In addition, the team is creating metrics that can be used to assess exhibits at zoos and aquariums, as well as establishing benchmarks for measuring program effectiveness, community benefit, and cultural relevance.

The project's results will be used in future planning of exhibits and programs at WCS, and will be made available to all members of the Association of Zoos and Aquariums.

gascar are collectively among the most endangered fishes in the world. Through many years of fieldwork, Loiselle and his team have discovered more than 20 species of Madagascar fishes and initiated captive management programs for them at the Aquarium. The three species slated to be part of the Bronx Zoo exhibit will be raised in the Aquarium's fish culture lab.

A trio of herpetology experts—Bill Holmstrom from the Bronx Zoo, Mark Halvorsen from Prospect Park Zoo, and Bruce Foster from CPZ—began to collaborate on an upcoming CPZ exhibit dedicated to endangered amphibians. The exhibit is just one stage in the WCS effort to address the worldwide amphibian extinction crisis, and will showcase programs to help save Wyoming, Puerto Rican crested, and Kihansi spray toads.

This year marked the tenth anniversary of CPZ's involvement in the Wyoming Toad Species Survival Plan (SSP) and participation in the Wyoming Toad Recovery Team. CPZ has produced groups of tadpoles and released them at Wyoming's Laramie Basin. This year, CPZ improved its on-site breeding space for this critically endangered amphibian.

WCS welcomed Jeffrey K. Sailer as Curator at CPZ. Sailer came from the Miami Metrozoo, where he was Curator of Birds. He participated in a National Geographic-funded study of the source of defensive toxins in pitohuis, birds endemic to Papua New Guinea.

Breezy, the beloved CPZ sea lion, died this year at the advanced age of 35, making her the oldest captive sea lion in the country, if not the world. She was originally rescued as a pup. Meanwhile, Herbie, a rescued harbor seal pup, took up residence at CPZ.

On behalf of government agencies in Peru, and at the request of the U. S. Forest Service and the U. S. Agency for International Development, Prospect Park Zoo Director Donald Moore and CPZ Assistant Curator of Animals Yula Kapetenakos evaluated operations at three Peruvian zoos and made recommendations for improvements. During their stay, Moore and Kapetenakos gave presentations in Spanish about WCS's innovative Animal Enrichment Program (AEP) to more than 100 employees at the three facilities. Future collaborations may include long-term management plans designed specially for each of the zoos.

**Central Park Zoo is one of eight North American zoos that participate in the AZA Species Survival Plan for the critically endangered Wyoming toad (opposite). Each spring, a number of the offspring that are produced remain in the captive-breeding program. The rest are returned to Wyoming, where they are released into their native wetland habitat as tadpoles or toadlets. Since 1996, the program has produced approximately 10,000 toads for reintroduction into the Laramie Basin.**



This year marked the tenth anniversary of Central Park Zoo's involvement in the Wyoming Toad Species Survival Plan (SSP) and participation in the Wyoming Toad Recovery Team. CPZ has successfully produced groups of tadpoles and released them at Wyoming's Laramie Basin.





Per the recommendations of the Spectacled Bear SSP, the Queens Zoo received Spangles, a female, from the Houston Zoo. She will be paired with Cisco, the resident male. Cisco's brother Pancho is now at the St. Louis Zoo, where he is paired with their female spectacled bear.

Queens Zoo Curator Scott Silver continued his long-term research on jaguars in Belize's Cockscomb Basin Wildlife Sanctuary and Jaguar Reserve. He was accompanied by Columbia University graduate students, one of whom, Ferdie Yua, worked in animal departments at both the Bronx and Central Park Zoos.

The Animal Enrichment Program (AEP) continued to create and present new opportunities for the animals in WCS parks to exercise both mind and body. The Keeper Animal Enrichment Fund awarded several grants to zoo and aquarium staff to pursue their areas of interest. Among these is the first in a series of symposia focusing on sea lions, a perennially popular species at the parks.

With the planning of big cat exhibits under way at the three city zoos, the AEP Committee held an Olfactory Workshop in January. The goal was to determine how to utilize the big cats' excellent sense of smell in enrichment opportunities at each of the exhibits. Workshop proceedings were announced to a City Cats Charette, a session that took a broader look at potential enrichments for the upcoming exhibits.

Colleen McCann received a WCS Species Survival Fund (SSF) award to assess the effects of human activity (direct and indirect) on the physiology and foraging success of gelada baboon populations in Simien Mountains National Park, Ethiopia. McCann was able to validate the project's research methods with the Bronx Zoo's gelada population before initiating them in the field. The goal is to inform management policies for humans and wildlife in the national park.

New York Aquarium Supervisor Hans Walters received an SSF award to continue his research on movement patterns of the highly migratory sand tiger shark. This year, Walters applied pop-up archival tags to five sharks in what is the only study of this species along the East Coast of the United States.

WCS's Wildlife Health Sciences (WHS), headquartered at the Bronx Zoo, again dispatched vets as part of its commitment to assist governments and organizations around the world in the care and conservation of wildlife. Senior Veterinarians Paul Calle and Bonnie Raphael, along with the Bronx Zoo's late Herpetology Curator John Behler, traveled to the Turtle Conservation Center in Vietnam's Cuc Phuong National Park. There they worked with staff to enhance the level of care for the chelonian collection.

Calle and Raphael, along with Associate Clinical Veterinarian Stephanie James and Aquarium Laboratory Services Manager Kate McClave, visited the Queen

**Opposite: New York Aquarium Keeper Paul Moylett works with Uupa, a Pacific walrus. The walrus came to the Aquarium as a youngster in 1994 from St. Lawrence Island, a remote island in the Bering Strait, between Alaska and Siberia. Now, she lives in Sea Cliffs with female Kulusiq and male Ayveq, as well as older female Nuka, who was rescued more than 16 years ago as an orphan around Barrow, Alaska.**

Elizabeth II Botanical Park, in Grand Cayman, Cayman Islands. They lent their collective expertise to captive-breeding and release efforts for the critically endangered Grand Cayman iguana. Over the past five years, WCS involvement has helped the world population of this species rise from fewer than 50 to more than 300, a true conservation success story.

Wildlife Health Sciences joined forces with Cornell University's College of Veterinary Medicine (CVM) to develop a health program that will train veterinarians in wildlife medicine and field studies. The program will include a combined residency training program in which post-doctoral residents in pathology, clinical medicine, and surgery will split their educational experience between the two institutions. This joint residency is one of several collaborative programs in the new WCS-Cornell partnership, which includes increasing animal disease surveillance around the world, boosting veterinary expertise in other nations, and developing a collaborative Global Center for Wildlife and Domestic Animal Health, to be located on the grounds of the Bronx Zoo.

For nearly 20 years, the Field Veterinary Program (FVP) has been at the forefront in monitoring the avian influenza virus. In an effort to improve the tracking of avian influenza, USAID and the U. S. Centers for Disease Control and Prevention awarded a multimillion dollar grant to the FVP in support of a new initiative to monitor wild bird populations around the world for disease, including avian influenza.

A partnership between the FVP, CVM, and the WCS Zambia Program garnered \$1.2 million support from USAID. Over the next four years, the partnership will develop a model for food security, improved rural livelihoods, watershed management, and biodiversity conservation in Zambia. This project comes out of the FVP's AHEAD (Animal Health for the Environment and Development) initiative, under the WCS "One World, One Health" umbrella.

This year, the Field Vet Program, along with the WCS Asia and China Programs, hosted the third "One World, One Health" symposium. The three-day workshop, held in Beijing, took a holistic and multidisciplinary look at how the world addresses new and emerging zoonotic diseases in the context of public health and environmental stewardship.

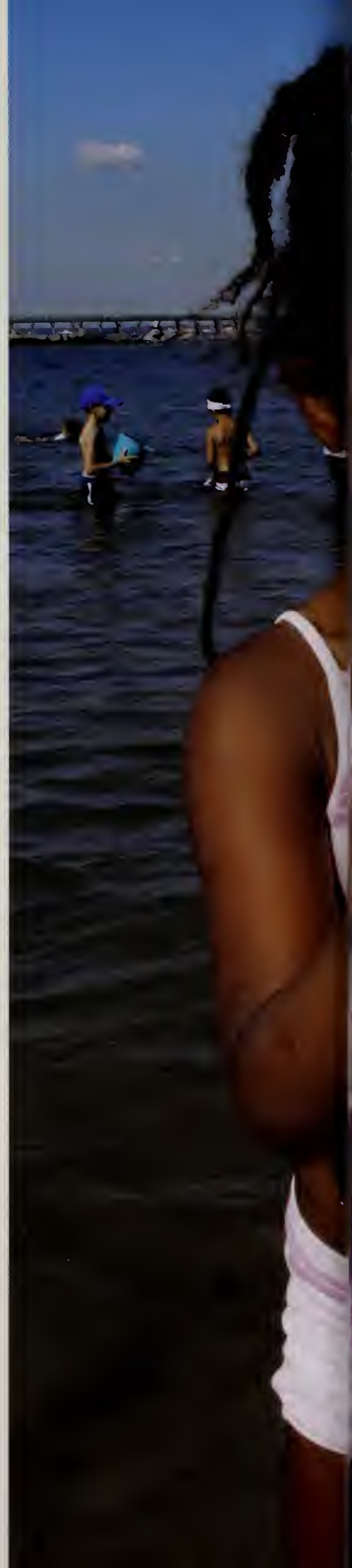




# *living* CLASSROOMS

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**I**n September 2005, the WCS Education Division's nationwide Girls for Planet Earth received the prestigious Education Award of the Association of Zoos and Aquariums. In March 2006, at the WCS Global Strategy session at New York City's Rockefeller University, the Education Division was deemed a "shining educational jewel" in the cultural landscape of the City of New York by Dolores Mei, head of the Division of Assessment and Accountability for the New York City Department of Education. Such accolades recognize the rich texture and depth of expertise underlying the division's accomplishments in translating conservation knowledge to varied publics. The plethora of high quality education programs serves as an essential gateway to conservation awareness.









Education has been a cardinal tenet of the WCS mission since its inception in 1895. Today, the Education Division supports the science literacy of teachers nationwide, bolstering the capacity of international environmental educators on several continents, and enhancing the eco-literacy of families and children in the boroughs of New York City and the tri-state area. By raising conservation awareness and providing tools for conservation action, the Education Division is preparing the next generation of conservation educators and action-oriented citizens.

To reach the maximum number of young minds with powerful conservation messages, the Division reaches out to local teachers and partners with schools around the WCS Living Institutions. At this year's Educators' Open House, 260 educators from 125 tri-state area schools gained insight into how valuable WCS resources and facilities are and how to utilize them to improve science, math, and literacy programs. Education staff from all five WCS facilities provided schoolteachers with information regarding quality programs for school groups, outreach opportunities, professional development workshops, and WCS Education Division award-winning curricula.

Just as schoolteachers must follow changes and trends in education, Education Division instructors must be keenly aware of developments in conservation so their courses reflect cutting-edge knowledge. Instructional staff from the WCS facilities meet quarterly for professional development sessions on topics ranging from the bushmeat crisis and international wildlife trade, to controversies in teaching evolution and intelligent design, to special needs audiences. These sessions are developed and implemented by the Education curators, with guest lectures from WCS scientific staff, curators, and program managers, as well as external education consultants.

Being mindful to think globally and act locally, WCS believes teachers in the tri-state region remain an audience of utmost importance because they provide a link to thousands of young minds. In *Beyond the Campus*, the newest teacher program made possible through a National Science Foundation grant, the Education Division broke new ground and partnered for the first time with undergraduate programs at Brooklyn College, Hunter College, Lehman College, and the College of New Rochelle. The target audience includes undergraduate education majors





**Beyond the Campus**, funded by the National Science Foundation, provides undergraduate education majors with skills to improve their science instruction and incorporate science content in their classrooms. Far left, Jennell Ives, Assistant Director, National Teacher Training Program, and a student check the quality of a water sample from the Bronx River. Above: Participants in **After School Adventures in Wildlife Science**, a program for high school students, complete an environmental science study at the Bronx Riverwalk. Pages 26–27: In the New York Aquarium's **Aquatic Adventures** summer camp, youngsters use plankton nets to investigate microscopic organisms on the beach at Coney Island.

who will, through credited 45-hour courses held at the Bronx Zoo, learn skills to improve their science instruction and help them incorporate conservation content into their classrooms. In the first year, 42 students completed the program. The two subsequent years will strengthen our relationships with local institutions of higher education and reach more students before they embark on their teaching careers.

WCS's long-standing Teaching Fellowship program inspires college students, recent graduates, and graduate students with an opportunity to explore in-depth conservation education at the Living Institutions. Fellows are mentored by experienced instructional staff as they are immersed in the WCS mission and projects, while studying WCS curricula and teaching methods and gathering a wealth of wildlife-related information.

Metro-area general audience programming continues to draw from and is enhanced by the rich store of WCS fieldwork. Collaborating with other WCS divisions, the staff design high-quality engaging programs that celebrate WCS's wildlife collections. The courses are taught both by our talented instructor staff and lecturers from Living In-

stitutions and International Conservation. At the Bronx Zoo, Wild Animal Keeper Jeff Munson demonstrated grizzly bear enrichment. Amy Vedder, Vice President and Director of Living Landscapes, spoke to teens and their parents about her life's work in gorilla conservation, as featured in *Gorilla Mountain: The Story of Wildlife Biologist Amy Vedder* by Rene Ebersole.

Similarly, at the New York Aquarium, aquarists and animal trainers provide extraordinary opportunities for the public to experience, firsthand, keepers at work and gain insight into their expertise in animal husbandry. Participants assist with the logistics of animal husbandry and research, and summer campers help maintain the pinniped compound. They also engage in a nutritional study of sea jellies. Summer teen interns collect plankton to feed marine animals.

A collaboration among Aquarium Education, Living Institutions, and EGAD developed the WaterWalk project. This outdoor public conservation corridor addresses the natural history of local wildlife along the Belt Parkway in Brooklyn. WaterWalk parallels the lower bay complex near the Verrazano Bridge.





## Live! From the Bronx Zoo

During the past five years, the WCS Education Division has created a stellar interactive videoconference program for school classrooms. Developed with funding from the U.S. Department of Education and Lucent Technologies Foundation, Distance Learning Expeditions uses ISDN lines and the Internet to bring live broadcasts to students from New York to California and from Mexico to Great Britain. Many of these students have no access to a zoo locally.

The Distance Learning Expeditions feature 50-minute videoconferences, as well as pre- and post-videoconference materials, to teach students about wildlife conservation and ecology. A "One WCS" exemplar, the program uses the organization's world-renowned scientific and environmental education resources. In addition, viewers have access via remote-controlled cameras to the Bronx Zoo's unparalleled collections of live animals, as well as its award-winning curricula and scientific field research. According to an independent evaluation, "In all measures of use and effectiveness, the Distance Learning Expeditions program is positively rated." During the past school year, the program provided videoconferences for nearly 8,000 students in 15 states, with 604 teachers participating.

Tori Howe, a student from Maine, said that she likes the fact that she doesn't have to leave the classroom to see the Zoo. Unlike a TV show or a Web site, "You can ask questions," she said. Jill Bell, her teacher, said that her students, "are accessing a primary source," despite the fact that the school is miles from the nearest zoo.

On Earth Day 2006, Aquarium guests celebrated in a global context with distinguished speakers such as Deborah Brosnan, Founder and President of Sustainable Ecosystems Institute. She presented on her work with the Tsunami Reef Action Fund on coral restoration in Southeast Asia. WCS Director of Marine Programs Cheri Recchia gave an overview of WCS's international aquatic field projects.

The WCS park renaissance affords instructors opportunities to develop exciting programs as new exhibits open. In the Bronx, African wild dogs will be featured in "Leader of the Pack" with Pat Thomas, Curator of Mammals, and in "The Truth about Dogs and Cats." At the Aquarium, "Underwater Cities" demonstrates the delicate coral reef ecosystem and WCS marine research, illuminated by the Glover's Reef exhibit. The discoveries of WCS researcher William Beebe and his deep sea exploration in the bathysphere are featured in "Earth, Sea, and Sky" programs.

Programming for city and area schools continues to be vital to the science education of thousands of elementary and high school students. There is growing consensus that quality programming during after-school hours prevents risky behavior and keeps kids safe. This year, City cultural institutions linked with Department of Youth and Community Development out-of-school-time providers to collaborate in Cultural After-School Adventures (CASA). After school and on weekends, CASA programs offer City youth enriching, educational, and diverse experiences.

In the 2006 pilot CASA programs, education staff at Bronx Zoo, Prospect Park Zoo, and New York Aquarium designed programs about ecology and the importance of wildlife conservation. They trained staff at after-school centers to engage children in multidisciplinary environmental learning activities. These programs included visits to the zoos or aquarium and family participation days.

In the highly successful Distance Learning Adventures, Bronx Zoo exhibits and animals are integrated into programming through the use of remote-controlled cameras and videoconferencing technology. Very popular with teachers across the country, these courses are constantly being revised and updated, and will soon feature live video feeds from the *Madagascar!* exhibit.

In 2006, Education Division staff designed the first-ever One WCS course to introduce new employees to the

**Students from PS 32 in the Bronx learn about the developmental stages of the frog with their out-of-school-time coordinator at the Flaherty Learning Center, Congo Gorilla Forest. Through support provided by the City Council, the Bronx Zoo Education Department partnered with the After-School Corporation to offer enhanced after-school cultural experiences to students in the community surrounding the zoo.**



This year, in the pilot Cultural After-School Adventures (CASA), WCS Education staff designed programs about ecology and the importance of wildlife conservation. CASA programs offer City youth enriching, educational, and diverse experiences.





prodigious accomplishments and multifaceted operations of WCS. The course combined the best interactive teaching tools and the expertise of personnel from all WCS divisions. Feedback from the first participants was extremely positive. The next offering will feature online activities and resources available to all employees, as well as an in-person workshop highlighting the mission areas of International Conservation, Living Institutions, and Education. This course provides building blocks for an ever stronger, more cohesive One WCS.

Throughout the New York metro area, our parks provide abundant inspiration and staff expertise to communicate to the broad public the issues surrounding the decline of the wild. In part, lack of awareness of these issues stems from a problem only recently named by social psycholo-

gists: nature deficit syndrome. The disorder results from the overwhelming impact of technology and the imposition of the built environment, which push nature from our collective psyches. From strategic locations in four New York City boroughs, WCS education outreach overcomes the effects of this disorder by introducing young and old to environmental issues and inspiring action on behalf of threatened wildlife and habitats.

At Prospect Park Zoo, nearly 10,000 children and adult urban dwellers in Brooklyn were introduced to wildlife science in preschools, libraries, hospitals, women's shelters, after-school programs, and parks. Young audiences participated in an interactive puppet show that utilized movement, song, and visual aids to reinforce relevant developmental skills, such as shape recognition,





while fostering a connection to animals. Other audiences and intergenerational groups used their observation and cooperation skills to hypothesize about animal form and function, and children with cognitive, physical, and visual disabilities took part in engaging educational experiences through the use of multisensory instructional methods.

The Wildlife Theater, based at the Central Park Zoo,

**Below, left: “The Great Migration Sensation,” performed by Wildlife Theater Players, based at the Central Park Zoo, was featured during the summer at the Bronx Zoo’s Wild Asia Plaza. Actors depict the northern migration of the Baltimore oriole in this interactive play. The theater highlights life science, ecology, and wildlife conservation. Below: Bronx Zoo instructor Kim VanMourik teaches a Colors program, featuring animal camouflage, at the Carl Sagan Discovery Program of the Children’s Hospital at Montefiore in the Bronx. This collaboration with Montefiore, now in its third year, provides elementary school programs to patients, training for Hospital “explainer” staff, and Wildlife Theater performances.**

provides outreach and conservation education for school-age children throughout the greater New York metropolitan area. Innovative programs added this year include Cool Rain Forest Connections, which highlights sustainable development. Audiences take away a better understanding of this complex concept and a new awareness about the direct relationship between small, personal acts of conservation and the survival of the rain forest.

Bronx Zoo instructors, teacher trainers, and volunteers provide enrichment programs to patients in hospitals and nursing homes, including the Carl Sagan Discovery Program at the Children’s Hospital at Montefiore. The Queens Zoo Education outreach program engages in highly regarded experiences at community libraries, YMCAs, Boys and Girls Clubs, and senior centers. On-site Discovery Centers at Queens and Prospect Park Zoos draw the public in to learn what a zoo vet does, “go camping” under the stars, get up-close to a tarantula, observe artifacts, and learn about New York wildlife.

International education initiatives build capacity for environmental education by providing professional training and curriculum materials to conservation educators





worldwide. In August 2005, international trainers, the WCS Shanghai Office, and two former WCS/CV Starr Environmental Education Fellows provided workshops for 60 schoolteachers in Shanghai and Hunchun, China. In northeast China's Heilongjiang Province, Hunchun is the gateway to one of China's last remaining tiger habitats, so the children growing up in the region will be critical to the tiger's survival there. The Mandarin-language edition of WCS's *Teachers for Tigers* manual provides teachers and their students with activities to promote attitudes and behaviors supporting tiger conservation.

In December 2005, hosted by Bhutan's Nature Conservation Division, Education trainers traveled up and down

mountains and around hairpin curves to Jigme Dorji National Park, one of the few places in the world where the ranges of tigers and snow leopards overlap. There, they lead a five-day workshop based on a version of *Teachers for Tigers* for 29 educators and staff of protected areas. Alumnae of that workshop led a second workshop for additional park staff in February 2006.

The WCS Spanish-language manual *Jaguares para Siempre (Jaguars Forever)* made its debut this year. The international education department led workshops in Costa Rica in partnership with the San Jose Zoo, and in Bolivia in collaboration with WCS scientific staff. Modeled on *Teachers for Tigers*, *Jaguars Forever* increases knowledge,

## International Fellows in Conservation Education

It would be difficult to imagine a more diverse group than this year's International Conservation Education Fellows. Ten educators from eight countries—Bhutan, Chile, China, Gabon, India, Myanmar, Tanzania, and Uganda—arrived in New York in the spring for two and a half weeks of advanced training, information exchange, and project planning. For Rabenirina Dokolahy and several of the other participants, it was the first time they had been out of their home nation.

WCS was especially happy to host Jessica Ulloa Mendieta and Ivan Meneses Uribe of Chile, who will work with the Education Division and WCS Latin America Program

to develop an education strategy for the vast wilderness of the Karukinka region in Tierra del Fuego.

Upon his return home to Tanzania, Nuhu Daniel, Education Program Coordinator in the WCS Southern Highlands Conservation Program, wrote, "With this e-mail I take the chance to escape reality once more and remember the fantastic time I had in New York. For me the greatest experience of all was meeting people from different countries, each with a unique personality with a different background and different interests. What I learned from you in our talks, in projects, field exercises, or just sitting together is a gift I will not forget."





promotes positive attitudes, and motivates action on behalf of the Americas' greatest cat. The workshops prepared 95 schoolteachers and professional environmental educators to convey appreciation of this majestic cat. The proximity of the participants to important protected areas that are home to jaguars is of special significance, as these communities are at the front lines of conservation.

In April, WCS educators partnered with WCS scientist Ullas Karanth, one of the world's foremost experts on tiger conservation. Through a five-day workshop in India's Bandipur Tiger Reserve, 20 educators were introduced to *Teachers for Tigers* and provided with interactive sessions to prepare them to lead its activities with diverse audiences. Shortly after the workshop, Apna Ramanan of the India-wide Kids for Tigers program wrote, "Our national conference was held on 28th–31st May. Thirty associates from 11 cities participated in this conference. Apart from

the usual talks and presentations that are a part of such a conference, the coordinators had a great time doing the activities we had planned. Most of it, of course, came from the *Teachers for Tigers* manual."

Discussions about prospects for a collaborative education initiative with Helen Crowley and the staff of WCS's Madagascar Program culminated in a three-week trip to several key WCS conservation sites there by Ian Signer, International Trainer and Curriculum Specialist. Later, Rabenirina Dokolahy, Coordinator of Communications and Environmental Education at the Makira Forest Project, came to New York to attend the Conservation Education Fellows program.

*Wild Explorations in Science*, an online curriculum designed to bring the excitement of science to high school students, consists of five modules about key species and conservation issues from the Bronx to Yellowstone, the Adirondacks, Latin America, and Madagascar. From school or home computers, students can test predator awareness by tossing wolf-scented snowballs at moose, count jaguars via camera trap photos, and use genetic tools to determine relationships of lemurs.

WCS volunteer-led programs at the Living Institutions conduct training for new docents and require continuing education. The coordinators regularly share their expertise to strengthen the program. Volunteers support special events and fund-raising activities, conduct VIP tours, and participate in animal enrichment programs.

**Opposite: WCS Conservation Education Fellows and International Education staff: back row, Ian Signer, WCS; Ana Laborde, WCS; Rengasamy Marimuthu, India; Nuhu Daniel, Tanzania; Rabenirina Dokolahy, Madagascar; Tom Naiman, WCS; James Musinguzi, Uganda. Front row, Nalini Mohan, WCS; Myint Myint Oo, Myanmar; Jessica Ulloa Mendieta, Chile; Wangpo Tenzin, Bhutan; Zirong Li, China; Michel Ikamba, Gabon; Iván Meneses Uribe, Chile. Below: Teachers for Tigers workshop, Jigme Dorji National Park, Bhutan**



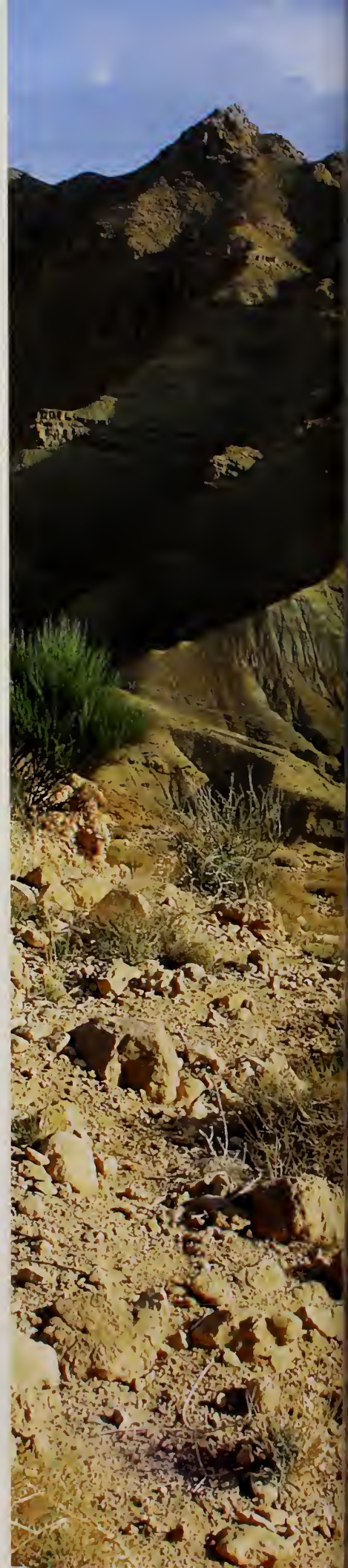


# *living* LANDSCAPES

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**T**he conservation of nature is one of the great imperatives of our time. That's why WCS works to help save the last of the wild in some of the world's remotest areas—the northern forests of Myanmar in Southeast Asia, the most impenetrable portions of Africa's Congo forest, or the high-altitude grasslands of central Asia's Pamir Mountains. We have not been hesitant to engage in politically unstable or economically volatile regions, whether trying to save the remnant populations of cheetahs in Iran, rebuild the park system of war-torn Democratic Republic of Congo, or restore the wildlife of Afghanistan.

One of the challenges for WCS of communicating the importance of these areas is their isolation. Few people will ever peer through the leafiness of an









African forest into the eyes of a chimpanzee, or gaze upon a vibrant Indonesian coral reef. It is the rare government official who goes beyond the familiar hallways to trek in the backwoods of his or her own country. While the “human footprint” covers nearly 90 percent of the globe, there are still wild places left on Earth. That is why WCS is turning to new *Gateways to Conservation*, to reveal the diversity of our world to government leaders, supporters, scientists, and all others whose actions have an impact on nature. Only through knowledge can wild lands and species be appropriately valued. Only by communicating their vulnerability can the urgency of their conservation be understood and acted upon.

Historically, the WCS Living Institutions have provided a way to learn and talk about nature and conservation. World-class exhibits inform WCS guests about the threats to wildlife and the solutions that will allow wild nature to persist. Beginning more than 50 years ago, the Bronx Zoo’s African Plains, and later JungleWorld, were designed to bring the wild home to people who live far from Africa and Asia. The challenges tigers face in the Russian Far East and in South Asia are vividly evoked in Tiger Mountain, and the logging threats to gorillas come alive in Congo Gorilla Forest.

Every day, conservation grows more complex. At one time, conservation goals could be accomplished by gathering information on the ecology and behavior of a species to inform relevant government agencies, or by delineating the boundaries of a reserve. Now, conservation happens within complex socioeconomic landscapes, at scales from global to regional to local, and it must consider and incorporate the perspectives of many diverse interest groups. At home and abroad, WCS is helping to influence national, regional, and local policies, and engaging in global conventions with an authority that resonates from decades of on-the-ground field experience.

## Africa

WCS has long served as a gateway between New York City and the conservation of Africa’s wild species and wild lands. In 1944, the African Plains exhibit opened at the Bronx Zoo, and spurred the creation of many great savanna parks in Africa. This year, the opening of the African Wild Dogs exhibit marked a renewed commitment by WCS to the recovery of this endangered species.

Meanwhile, guests visiting the Zoo’s Congo Gorilla Forest exhibit this year contributed \$800,000 to WCS’s efforts to save the mighty Congo rain forest. They also learned about the challenges posed by the bushmeat trade, diseases such as Ebola, and the establishment of well-managed parks, community reserves, and logging concessions. WCS surveys of elephants and apes across the Congo basin documented continued disturbing declines, but found hope in WCS living landscapes in Nouabalé-Ndoki, the

Ituri Forest, and other areas. These successes challenge WCS to safeguard these living landscapes and replicate them elsewhere.

In Gabon, WCS has been applying the unique skills of the exhibit design team (EGAD) to create a vision for developing environmentally sensitive ecotourism and an interpretive center for the children of Libreville. The EGAD team is converting the Zoo’s historic Lion House into the Bronx’s gateway to Madagascar—the world’s most biologically rich island—and designing a sister education center in the heart of Masoala National Park for the Malagasy people. Their work draws on the experience of the WCS team in Madagascar. WCS studies of the Makira Plateau forest and the island’s great fringing reefs prompted an announcement on January 1, 2006, by Madagascar President Ravolamanana of the creation of new protected areas encompassing one million hectares.

## Asia

For more than 30 years, WCS has led the global effort to save tigers. From fieldwork across the species’ range states to the groundbreaking Tiger Mountain exhibit in the Bronx Zoo, WCS has worked tirelessly to preserve this wilderness icon. Recently, WCS launched Tigers Forever, an initiative of the Asia and Science and Exploration Programs. This innovative project focuses not only on preserving tigers, but sets a target of increasing tiger numbers by 50 percent across key sites. This pioneering “business plan” will help tigers turn the corner from continuing decline to healthy populations.

In early 2006, WCS launched a three-year project, funded by USAID, in war-torn Afghanistan. With support from the Field Veterinary and Science and Exploration Programs, this project will build capacity at community and government levels and help create the country’s first protected areas to save species such as Marco Polo sheep and the snow leopard.

Across Asia, WCS brings together its institution-wide experience to save endangered wildlife. The unique, collective expertise of WCS staff in its field programs, Living Institutions, and Wildlife Health is essential to protect the last of the wild—from the colonies of maleos (turkey-size, mound-nesting birds that use geothermal heat to incubate their eggs) of Sulawesi, to the remnant population of Burmese roofed turtles in the rivers of northern Myanmar, to the last Asian vultures soaring above the forested plains of Cambodia.

**Page 37: The stark, mountainous landscape of Iran’s central plateau is the last stronghold of the Asiatic cheetah. WCS is providing technical assistance to Iranian biologists trying to save the species. Opposite: WCS Conservationist Ullas Karanth has been studying tigers in India for more than 20 years.**



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## Hunting and Wildlife Trade

The world's most spectacular wild species are being lost due to the vast, and increasing, trade in wildlife. Human consumption of wildlife is an age-old tradition. Until recently, people hunted mainly for their own subsistence, using simple weapons. Sales of wildlife were generally made within walking distance of the hunt. Now, roads reach the most isolated places on Earth, allowing hunters and modern weapons to flow in and wildlife to flow out to distant markets. Due to globalization, live parrots and smoked monkeys from central Africa arrive in New York and London; fox furs and shatoosh wool from the steppes of Asia are worn in Washington, D.C. and Milan.

The wildlife trade is huge business. Even though much of it is illegal, the trade flourishes because information available to policy-makers is poor and political will weak, rural hunters have few alternatives to selling wildlife, consumers are unaware that their behavior threatens wildlife, and management capacity is highly inadequate. Across the globe, wild areas are falling silent as animals are hunted out. WCS works to control the long-distance wildlife trade by addressing the entire trade chain: protecting animals in the wild; controlling sales in urban markets, especially in the major markets of east Asia; and trying to break the trade chain between the two. WCS currently has 65 projects and more than 300 staff working on hunting and wildlife trade in 27 countries around the globe.

## International Conservation Policy

Established in 2005, the International Conservation Policy Program is a gateway between WCS field programs and global decision-makers. In March 2006, WCS embarked on a partnership with the Paris-based World Heri-

tage Center to improve management of key natural World Heritage Sites and integrate them into surrounding landscapes and seascapes. Today, WCS works at more than 30 natural World Heritage Sites. The Policy and Landscape Ecology Programs advise the Inter-American Development Bank on methods to evaluate the impact of large-scale development corridors on biodiversity in the central Andes. This year, WCS brought to bear its extensive expertise on protected areas during deliberations of the Convention on Biological Diversity (CBD), at which top environmental officials from 160 nations met in Brazil to coordinate their biodiversity conservation efforts. Also in support of the CBD, WCS has developed site-based indicators of biodiversity, which will help the convention measure its progress in meeting the international target of reducing the rate of biodiversity loss by the year 2010.

## Latin America and the Caribbean

Until the Panama Canal was built in 1914, the Strait of Magellan was the natural route connecting the Atlantic and Pacific oceans. On the southern side of the strait, the island of Tierra del Fuego was considered so remote it became known as the "End of the World." For the past two years, WCS has been developing a conservation initiative for the Southern Cone (Argentina, Chile, Uruguay, and Paraguay), which is anchored in this magical island. Karukinka, which means "our land" in the indigenous Selk'nam language, is a private protected area in Tierra del Fuego that contains diverse temperate landscapes such as austral forests, peat bogs, and steep mountains. Guanacos and culpeo foxes roam a region that was saved from extensive logging. As part of management plans for the area, the Latin America Program, the WCS Institute,





and the Field Vet Program are analyzing the best ways to manage invasive species, including beavers and mink. The WCS Education Division is training local teachers to develop sensible approaches to conservation that are tailored to regional conditions.

In collaboration with the WCS Jaguar Program, the Latin America Program is developing an integrated strategy to build on the success of the *Paseo Pantera* (Path of the Panther) to establish corridors for the conservation of jaguars. Particularly in the Darién area of Panama, WCS is working to educate policy- and decision-makers about the need to maintain the integrity of key ecosystems.

In the central Andes, WCS is working to highlight the crucial link between the health of wildlife and the health of domestic animals. A visit to zoos in Lima, Pucallpa, and Iquitos strengthened the links between ex-situ conservation and efforts to conserve wildlife in the Yavarí landscape of northeastern Peru.

## Living Landscapes

The Living Landscapes Program (LLP) continues to lead the field in developing rigorous science-based tools for making the best conservation decisions. The Last of the Wild and the Human Footprint are remarkable maps of Earth that show vividly the last vast intact ecosystems and where human pressure is greatest and least. When combined with spatial analyses that determine priority conservation areas for individual species across their geographic range—analyses such as WCS did this year for tigers, lions, and American bison—the maps serve as gateways to help channel investments efficiently and effectively to save critically important wildlife and wild lands.

Focusing on landscape species—wildlife that require

**From far left: In Kenya, Makararam ole Sairowa tracks a radio-collared lion; in Peru, Pablo Puentas works with people to develop management plans; at the Zimbabwe Wildlife Capture Course in Malilangwe Wildlife Reserve, Zimbabwe, veterinarian Paul Meyer, colleagues, and students assess a giraffe's health.**

large areas and multiple resources, and interact negatively with people—has strengthened WCS conservation strategies and actions across key sites in Cambodia, Laos, Congo, Belize, Guatemala, and the Yellowstone area of Wyoming. More broadly, LLP staff have used the concept of “meeting the needs of wildlife in landscapes of human influence” to guide conservation strategies from the Amazon to the Arctic and from Thailand to Tanzania.

By using LLP tools, WCS staff visualize the world through the eyes of wildlife, and then decide where to work, how to work strategically, and how to demonstrate effectiveness. Increasingly, LLP tools and concepts are being used by other conservation nongovernmental organizations (NGOs) keen to learn from our experience and original thinking. WCS's ideas and actions are helping to build local, national, and international communities committed to the practice of conservation, ensuring that wildlife and wild places will always provide us with an irreplaceable sense of awe.

## Marine

With their stunning beauty and abundant, colorful wildlife, coral reefs are gateways to marine conservation around the world. WCS's coral reef programs are building new conservation constituencies and developing innovative, problem-solving approaches to conserving these



complex ecosystems. For example, WCS works with a highly committed group of local communities and strong NGO partners in Fiji to establish science-based networks of marine protected areas aimed at protecting Fiji's Vatu-i-Ra seascape. These areas will help conserve the complex food web relationships of sharks, turtles, reef fish, and corals while meeting the needs of local communities. Similar programs in Belize, Indonesia, and Madagascar combine the latest coral reef science with socioeconomic information to foster innovative, culturally appropriate, and effective conservation solutions.

WCS conducts capacity building and mentoring programs for young marine science professionals seeking to grow into leadership positions in their countries. In Papua New Guinea, WCS works with coastal communities and conducts a field- and classroom-based course to train the next generation of conservation professionals.

Coral reefs also serve as gateways to conservation for the hundreds of thousands of guests who visit the new Glover's Reef exhibit at the New York Aquarium. This replica of a Caribbean reef network spotlights WCS's conservation efforts in Belize. Soon, guests at the Bronx Zoo will marvel at the Malagasy marine wonders in the upcoming *Madagascar!* exhibit.

## North America

WCS is a respected partner, primary source of information, and catalyst for action in the North American conservation arena. Recent efforts have concentrated on key issues of energy development, habitat integrity and connectivity, predator recovery, human-wildlife conflicts, and protected area creation.

In the U.S., WCS is the nongovernmental leader documenting energy development impacts on wildlife from the Arctic to the Northern Rockies. Field studies in Greater Yellowstone have influenced predator management policies and practices on public and private lands, and results from WCS projects are being used to reduce human conflicts with black bears around the country. The findings also underscore the need to control the growing sprawl in areas such as Yellowstone and the Adirondacks.

In Canada's great boreal forest zone, WCS is a respected leader in the effort to integrate reserve creation and expansion with planned development interests. WCS places a high priority on indigenous capacity building.

WCS North America and Wildlife Health staff monitor wildlife populations in Greater Yellowstone, the Adirondacks, and the Arctic. The Education Division has developed pioneering curricula based on two field sites, and WCS staff are developing a campaign for ecological recovery of the American bison. North America field projects have generated significant publicity and guided WCS policy initiatives in New York State and Washington, D.C.

## Science and Exploration

Using rigorous scientific techniques, Science and Exploration Program (SEP) field scientists have launched new initiatives to protect threatened species across the larger landscapes in which they occur. The Big Cats Program focuses on tigers, lions, and jaguars. The new Kaplan Awards Program funds promising young scientists who want to devote their studies to cat conservation. Collaborating with the WCS Asia Program, SEP began the first radiotelemetry study of Asiatic cheetah in Iran.

In the Zapata Swamp of Cuba, work continues on the critically endangered Cuban crocodile as part of the Crocodilian Conservation Initiative to save the world's seven most endangered crocodilian species. In the rugged mountains of Tajikistan, Pakistan, Afghanistan, and China, WCS surveys Marco Polo sheep, and works toward the creation of the transboundary Pamir Mountain Peace Park. In the remote southeast corner of Chad, WCS is counting elephants in Zakouma National Park, the last great stronghold for wildlife in the Sahel of Africa.

## Training & Capacity Building

WCS is committed to building conservation constituencies and training the next generations of local and expatriate professionals. The Training and Capacity Building Program (TCBP) carries out this commitment in several ways: training and supporting individuals embarking on a career in conservation, working with government and nongovernmental partners to develop the institutional resources to achieve conservation, and building awareness and support for conservation within civil society constituencies, through education and public campaigning.

This year, through the Graduate Fellowship Program, scholarships went to 11 MSc and PhD students from China, Colombia, Gabon, Mongolia, Nicaragua, Papua New Guinea, Tanzania, Thailand, Uganda, and USA/Lower Brule Sioux. A total of \$248,671 was awarded to 24 individuals through the Research Fellowship Program, which delivers small grants for field-based conservation research.

Six MBA student teams from Haas Business School, University of California Berkeley, worked with WCS programs or partner NGOs on topics ranging from ecotourism business planning in Cambodia and Madagascar, to marketing Zambia-produced elephant friendly chili, to developing a corporate membership program in Vietnam, to business planning for alternative markets in Zambia.

The NGO Institutional Development Program awarded four grants totaling \$160,000 to WCS partner nongovernmental organizations in Bolivia, Tanzania, Vietnam, and Kenya. WCS also developed a new partnership with Rare, a nonprofit group devoted to building awareness and support for grassroots conservation. Rare Pride campaigns were launched in Gabon and Lao PDR.



WCS involvement in the American West began nearly 100 years ago with a campaign to conserve the American bison (below). There are nearly 500,000 bison, but only about 20,000 of them live in noncommercial herds—most of them in the Greater Yellowstone Ecosystem (GYE). With the greatest concentration of large mammals in the lower 48 states and a full suite of native carnivores, GYE is one of the few temperate ecosystems where ecological processes such as predator-prey interactions are still in place. Jeff Burrell (right) is the WCS Project Manager in the region.





# field projects

## Africa

### BOTSWANA

Scent marking in African wild dogs: Understanding habitat management and conservation. M. Parker

### CAMEROON

Conservation and community participation in Banyang-Mbo Wildlife Sanctuary. T. Sunderland

Survey and priority setting in the Cameroon/Nigeria highlands. T. Sunderland, R. Fotso, J. Oates, M. Eno, A. Nicholas

Status and conservation of Cross River gorillas in the Cameroon Highlands. J. Groves, J. Oates, A. Nicholas

Management of Mbam-Djerem National Park. F. Hiol Hiol, R. Fotso

Large mammal surveys and bushmeat studies around Mbam-Djerem National Park. R. Fotso, F. Hiol Hiol, F. Maisels

CAMRAIL: Support of law enforcement of bushmeat transport on the railway. R. Fotso

Ecology and status of drills (*Mandrillus leucophaeus*) in Korup National Park, Southwest Cameroon: Implications for their conservation. C. Astaras

**CENTRAL AFRICAN REPUBLIC**  
Dzanga forest elephant demographics and social dynamics. A. Turkalo

Research on the use of elephant infrasound as a method of censusing in forests (Cornell University). K. Payne, A. Turkalo

### CONGO REPUBLIC

Nouabalé-Ndoki Project, Nouabalé-Ndoki National Park (NNNP). M. Gately, E. Stokes, P. Elkan, S. Elkan, J. Mokoko, D. DosSantos

Large mammal distribution and relative abundance between NNNP and the village of Bomassa-Bon Coin. E. Stokes, D. Ekoutouba, M. Mhoulafini, M. Hockemba

Forest elephant and large mammal distribution and abundance in relation to human activities. E. Stokes, P. Boudjan, S. Blake

Long-term phenological and nutritional studies of elephant and ape foods. E. Stokes, D. Morgan, C. Sanz, T. Breuer, L. Bodjo

Nouabalé-Ndoki peripheral zone management. P. Elkan, P. Auzel, C. Prevost, S. Elkan

Biological surveys and monitoring in Nouabalé-Ndoki peripheral zone and greater landscape. P. Elkan, E. Stokes, S. Strindberg, R. Malonga, A. Moukassa

Bushmeat off-take monitoring in logging concessions in the buffer zone of NNNP. P. Elkan, M. Mocknin, A. Moukassa, M. Eaton, R. Malonga

Bushmeat off-take and human demographic monitoring in Bomassa-Bon Coin, NNNP. D. Ekoutouba, E. Stokes

Mbeli Bai gorilla social dynamics, ecology, and genetics. T. Breuer, E. Stokes, B. Bradley

Ecology and social behavior of chimpanzees of the Goualogo Triangle, NNNP. D. Morgan, C. Sanz, J. Onononga

Chimpanzee genetics study, Goualogo Triangle, NNNP. D. Morgan, C. Sanz, B. Bradley

Before-and-after impacts of logging: Focal study on chimpanzees and gorillas, Goualogo Triangle, NNNP. D. Morgan, C. Sanz, S. Strindberg

Conservation of Konkouati-Douli National Park. H. Van Leeuwe

Conservation and biological surveys of Lac Télé Community Reserve. H. Rainey

School education program and environmental curriculum development. S. Elkan, M. Gately, E. Stokes

Odzala Kokoua National Park Project. R. Malonga

Bateke Plateau Project. N. Gami

Development of Congo Wildlife Service. P. Elkan, J. Mokoko

Lope/Chaillou Project in Congo. P. Elkan, J. Mokoko

### DEMOCRATIC REPUBLIC OF CONGO

Elephant and large mammal monitoring in the Okapi Faunal Reserve. J. Hart, P. Tshikaya

Okapi Faunal Reserve and Community Management Zoning Project. T. Hart, R. Tshombe, R. Mwinyihali

Ituri Forest Research and Training Center (CEFRECOT). T. Hart, J. Hart

Botanical exploration of the Okapi Faunal Reserve. T. Hart, C. Ewango

Gorilla monitoring in Kahuzi Biega National Park, exploration of the lowland sector and habitat mapping. I. Liengola, J. Hart, M. Mhachu, J. Muhigua

Large mammal surveys and support to management in Kahuzi Biega National Park. I. Liengola, J. Hart, F. Grossmann

Support of the re-establishment of Kahuzi Biega National Park infrastructure. J. Hart, S. Whataut

Coordinating a collaborative biological monitoring program in five World Heritage Sites, in conjunction with MIKE program (Monitoring the Illegal Killing of Elephants). O. Ilambu, J. Hart

Itombwe Forest, advising and follow-up on a community conservation project developed by national NGO. J. Hart, L. Mubalama

Development of a national conservation database, support systems for ICCN. T. Hart, R. Mwinyihali

Salonga National Park Project. J. Ilanga

Maiko National Park. F. Amsini

Estimating forest zoning and forestry impact. J. Makana

### ETHIOPIA

Ethiopian elephant: Critical population monitoring and law enforcement. Y. Demeke

### GABON

Leopard surveys and ecology in Lopé Reserve. P. Henschel, J. Ray

Research and training for management of Lopé National Park and development of visitor center. K. Abernethy, L. White, K. Jeffrey, E. Chehoski

Mandrill ecology and ranging patterns. K. Abernethy, W. Karesh

Forest history and dynamics and their implications for management in the Lopé National Park. L. White, R. Oslisly, A. Batsiellili

Ecology and social organization of elephants in central Gabon. L. Momont, S. Blake

Use of plant genetics to map forest refuges. N. Muloko Ntoutoume

Sea turtle research, conservation, and support to a national NGO, ASE. G. P. Sounguet, R. Parnell

Bushmeat survey and management. K. Abernethy, M. Starkey, D. Wilkie, E. Effa

Management, research, and ecotourism in Iguela, coastal Gabon. M. Fay, T. Nishihara

Gorilla research at Langoué Bai. M. Doukaga Kombila

Establishment of national park management infrastructure with Gahon government. N. Orbell, L. White, B. Curran, M. Fay

Cetacean research and humpback whale conservation in coastal Gabon. S. Nguesso, N. Bdinga, T. Collins, H. Rosenbaum

Support to government for establishment of a protected areas network: 13 new national parks. L. White, M. Fay

Bateke National Park Project. R. Calaque

Ivindo National Park Conservation Project. N. Orbell

Mont Cristal National Park. J. Overman

Gabon Press and Communications Program. J. Ponte

Mayumba Marine National Park Project. R. Parnell

Birougou and Waka National Park Projects. M. Starkey

Akanda/Pongara National Park Project. B. Curran

Gabon outreach and education program. E. Chehoski

Gabon ecotourism development. J. Gwynne, L. White, B. Curran

Parks and People. J. Demmer, D. Wilkie

Reduced impact logging. M. Vroom

### GHANA

Taxonomy and ecology of elephant in Ghana. B. Kumordzi

### IVORY COAST

Conservation of West African manatees and Fresco Lagoon complex. A. Kouadio

### KENYA

Laikipia Predator Project: Conservation of large carnivores in livestock areas, mitigating human-predator conflict. L. Frank

Conservation of African wild dogs in the Samburu-Laikipia area. R. Woodroffe

Kilimanjaro Lion Conservation Project. L. Frank

Breaking bad habits: Rethinking linkages for community conservation and rural development in sub-Saharan Africa. A. Quraishi

Reintroducing a large herbivore: A remote sensing and agent-based modeling technique to determine the mountain bongo's past and present critical habitat. L. Estes

The role of anthropogenic fire and livestock grazing in sustaining avian diversity in East African savannas. M. Gregory

### MADAGASCAR

Masoala National Park Conservation Project. N. Blondel, J. MacKinnon, H. Crowley, L. Andriamampianina

Protection of Makira Forests through the creation of a new conservation site. C. Holmes, H. Crowley, L. Andriamampianina, D. Meyers

Freshwater fish in-situ and ex-situ conservation. P. Loiselle

Conservation of humpback whales and marine mammals in Antongil Bay. H. Rosenbaum, Y. Razafindrakoto, S. Cerchio

Conservation of the radiated tortoise and spider tortoise and the habitat in southern Madagascar. H. Randriamahazo, J. Behler

Sahamalaza community-based natural resource management project. L. Andriamampianina, N. Razamasinoro

Capacity building and training pro-



gram; education and training modules for conservation biology for university and government institutions. H. Crowley, T. Rabagalala

Support to Madagascar government's national conservation planning. J. MacKinnon, H. Crowley, L. Andriamampianina, H. Randriamahazo, D. Meyers

Support to the Madagascar National Parks Service: Business plans for parks, ecological monitoring, and sustainable finance mechanisms. J. MacKinnon, H. Crowley, R. Victorine

Promotion of ecotourism in Masoala and Andohahelo National Parks. H. Crowley, L. Andriamampianina, J. MacKinnon

#### NAMIBIA

Ecology, conservation, and community-based management of desert-adapted elephant and giraffe in northwest. K. Leggett

#### NIGERIA

Status of gorillas, other primates, and forests in eastern Nigeria. A. Dunn, J. Oates

Development of a conservation resource center at the University of Calabar. A. Dunn, J. Oates

Surveys of chimpanzees in the western forests of Nigeria. E. Green-grass, J. Oates

#### RWANDA

Nyungwe forest conservation: Ecotourism, education, inventory and monitoring. M. Masozera, I. Munanura, F. Mulindahab, A. Plumptre, M. Sindikubwabo, B. Kaplin

Feeding ecology and ranging of chimpanzees at high altitudes. M. Masozera

Ranging behavior of a group of 400 colobus monkeys. F. Mulindahabi, M. Masozera, A. Plumptre

Restoring biodiversity conservation capacity in the mountain forest protected areas. M. Masozera, B. Weber

#### SOUTH AFRICA

Impact of legal and illegal hunting on leopard ecology in KwaZulu-Natal; using leopards to promote conservation planning. L. Hunter

#### TANZANIA

Southern Highlands Conservation Program. T. Davenport

Carnivores of the Rift. D. DeLuca, N. Mpunga

Tanzania Cheetah Conservation Program: A survey of the distribution and status of cheetahs. S. Durant, J. Shemkunde, D. Gottelli

Tanzania Carnivore Conservation Center. S. Durant, M. Msuha

The effect of poaching on elephant social systems and human/wildlife conflict mitigation outside park

boundaries, Tarangire. C. Foley, L. Foley, S. Sikombe

Conservation Flight Program. D. Moyer

Rungwa-Ruaha Landscape Program. P. Coppolillo

Zanzibar coastal forest conservation and red colobus project. K. Siex

A national plan for mammal conservation in Tanzania. C. Foley, S. Durant, A. Lobora, S. Mduma

#### UGANDA

Development of the Institute of Tropical Forest Conservation in Bwindi Impenetrable National Park. A. McNeillage

Surveys of the Bwindi Impenetrable National Park. A. McNeillage, A. Plumptre, W. Olupot

Conservation of the mountain gorilla population in Bwindi Impenetrable National Park. A. McNeillage

Study of edge effects in the conservation of fauna and flora in Bwindi Impenetrable National Park. W. Olupot

Impacts of tourism on mountain gorilla behavior. A. McNeillage, F. Muyambi

Biodiversity: Ecological processes, evolutionary mechanisms, and capacity building. C. Chapman, L. Chapman

Primate dispersal and conservation in Kibale Forest. W. Olupot

Socioeconomic survey of communities living around Bwindi Impenetrable National Park, Virunga Volcanoes, and Nyungwe National Park. A. Plumptre, I. Munanura, A. Kayitare, H. Rayner

Developing strategies to address human-wildlife conflict in collaboration with CARE. A. McNeillage

Building the capacity of Uganda Wildlife Authority in monitoring, research, and adaptive management. A. Plumptre

Transboundary collaboration for protected areas in between Uganda Wildlife Authority and Institut Congolais pour la Conservation de la Nature in Democratic Republic of Congo. A. Plumptre, I. Owunji, D. Kujirakwinja

Economic valuation of forest types. G. Bush, A. Plumptre, R. Victorine

Conservation of chimpanzees. A. Plumptre

Nutritional ecology of chimpanzees, Kibale National Park. A. Pokemphner

Biological surveys of the Albertine Rift forests to establish zoning plans for the forests. A. Plumptre, I. Owunji, D. Nkuutu

The ecology of disease transmission: Implications for primate conservation in Kibale National Park. I. Rwego



## Conservation in Central Africa

Perhaps West Africa's leading ornithologist and most committed conservationist, Roger Fotso was the first African national to lead a WCS country program. Roger completed his PhD in ornithology in Belgium.

During the past six years, he built a program recognized as the most effective field conservation effort in Cameroon. On the fertile and densely populated highlands that border Nigeria, Roger and his team are saving the world's most endangered great ape, the Cross River gorilla, and creating a transboundary conservation landscape. With support from the Ministers of the Environment of both Cameroon and Nigeria and from the German Development Bank, this project highlights an unrivaled hotspot of biodiversity, which has been all but forgotten by the outside world.

In central Cameroon, where rain forest meets grassland, Roger helped the government establish and manage Mbam Djerem, a national park that harbors more than 600 species of birds, forest and savanna wildlife, and a unique, dynamic ecosystem, all with support from ExxonMobil and the FEDEC Foundation. In the first project of its kind in central Africa, Roger is working with the national railroad, with support from the World Bank, to halt the illegal and unsustainable trade in bushmeat from Mbam Djerem to the capital, Yaoundé.



## ZAMBIA

Improving natural resources management and sustainable agriculture in the Kafue area, CONASA. D. Lewis, WCS Zambia Staff

Community markets for conservation and rural livelihoods (COMACO). D. Lewis, WCS Zambia Staff

Database management for a multi-sector approach to wildlife conservation. D. Lewis, WCS Zambia Staff

Conservation through "Food-for-better-farming" initiative. D. Lewis, WCS Zambia Staff

Poacher/hunter-to-farmer transformation program. D. Lewis, WCS Zambia Staff

Community expeditions in African culture and wilderness—living ecotourism. D. Lewis, WCS Zambia Staff

Nyamaluma College community-based training and land-use planning/African College for CBNRM. D. Lewis, WCS Zambia Staff

Ecology and deterrence of crop-raiding elephants. F. Osborn

## REGIONAL

Census of the mountain gorillas of the Virunga volcanoes (Rwanda, Uganda, DR Congo). A. McNeillage, M. Gray, K. Fawcett, M. Robbins, A. Plumptre

Central African Forestry Program. J. Hall, V. Medjibe

Ecology and management of the African dwarf crocodile in Gabon and Congo. M. Eaton, J. Thorbjarnarson

Forest buffalo survey and conservation in Gabon and Congo. L. Molloy, R. Malonga, W. Karesh

Satellite image analysis of the Albertine Rift to assess forest change since the mid-1980s. A. Plumptre, N. Laporte

Development of elephant monitoring system in the Congo Basin for CITES, MIKE Program (Monitoring the Illegal Killing of Elephants). S. Blake, J. Hart, R. Beyers

Range-wide priority-setting exercise for the African lion/Lion Conservation Program. L. Hunter, E. Sanderson, K. Minkowski, K. Didier

MegaFlyover: Last of the Wild/Human Footprint, over-flight and ground-truthing exploration for setting conservation action priorities across the African continent. M. Fay, E. Sanderson, P. Ragg, J. Forrest

Congo Basin Forest Partnership (CBFP) under Central African Regional Program for the Environment (USAID/CARPE). J. Deutsch, J. Hall

Trinational park monitoring: Congo, CAR, Cameroon (WCS/WWF/USAID). A. Turkalo, M. Gately, E. Stokes

Conservation Flight Program. D. Moyer

WCS Africa small grants program for Africans. G. Patterson, A. Pokempner

GIS and remote sensing support. G. Picton-Phillips

Conservation Finance Program. R. Victorine

Lion Conservation Program "Project Leonardo." L. Hunter, N. Williams

Priority setting for African carnivores. J. Ray, L. Hunter

Population status, conservation and systematics of Nile crocodiles in West and central Africa. J. Thorbjarnarson, G. Amato, M. Shirley

## Asia

### AFGHANISTAN

Biodiversity conservation in Afghanistan. A. Dehgan, P. Zahler

Wildlife surveys in the Pamirs. A. Dehgan

Marco Polo sheep research project. A. Dehgan, C. Walzer

Four-country transboundary protected area initiative. G. Schaller, P. Zahler, A. Dehgan

Community conservation in the Wakhan. A. Dehgan, J. Mock

Rangeland assessments in Afghanistan. A. Dehgan, D. Bedunah

Hazarajat Plateau conservation initiative. A. Dehgan, C. Shank

Wildlife-livestock ecosystem health in the Pamirs. S. Ostrowski, A. Dehgan

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GIS landscape analyses. E. Delattre, H. R. Rahmani, A. Dehgan

Conservation capacity building and training. A. Dehgan, K. Stevens

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Cambodian Vulture Conservation Project. S. Chansocheat, T. Clements, M. Gilbert

Conserving the Tonle Sap Great Lake's large-waterbird colonies. S. Visal, L. Kheng

Conservation and recovery of the estuarine terrapin *Baratur baska* in Cambodia. H. Sovannara

Conservation of the seasonally inundated grassland biodiversity of the Tonle Sap Great Lake. H. Channan, T. Evans

Establishing CALM (Conservation Areas through Landscape Management) in the Northern Plains of Cambodia. T. Setha, H. Piseth, T. Clements

Production of Khmer language field guides and training materials. WCS Cambodia staff

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Transboundary Amur tiger conservation project. E. Li, C. Zhang, D. Miquelle

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Conservation and recovery of the Chinese alligator. J. Thorbjarnarson, X. Wang

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Tiger surveys and monitoring. U. Karanth, S. Kumar, Srinivas, J. Krishnaswamy, G.V. Reddy, A. Gopalaswamy

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Small carnivores survey in Western Ghats. D. Jathanna

Distribution of Nilgiri langurs in Western Ghats. S. Ram

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## INDONESIA

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Elephant ecology and resolution of human-elephant conflicts in southern Sumatra. D. Gunaryadi, M.T. Soleman, S. Hedges

Sumatra-wide forest assessment. D. Gaveau, Aslan, B. Antonio, B. Dewantara

Maleo conservation. I. Hunowu, D. Rogi, J. Tasirin

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Sumatra-wide large mammal status assessment. H. Wibisono, D. Gunaryadi, S. Hedges, N. Brickley

Wildlife crime and wildlife conflict response units. D. Nugroho, S. Siwu, H. Alexander, U. Wijayanto, N. Andayani

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## IRAN

Conservation of the Asiatic cheetah, its natural habitat, and associated biota. G. Schaller, L. Hunter, P. Zahler

## KAZAKHSTAN

Naurzum biological field station. T. Katzner, E. Bragin

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Status and conservation of vultures in southeastern Kazakhstan. T. Katzner, S. Sklyarenko

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Bolikhamxay ecosystem and wildlife conservation project. M. Hede-mark, A. Johnson, C. Hallam, P. Sinthamavong, P. Sisavath, A. Rasphone, S. Vannalath

Conservation education and awareness project. T. Hansel, S. Saypanya



University biodiversity conservation curriculum project (WCS and AMNH). A. Johnson, K. Spence, S. Ounmany, C. Hallam, M. Rao

Vientiane Municipality wildlife trade project. R. Stenhouse, S. Philachanh, D. Vannavong, M. Gilbert

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#### **MALAYSIA**

Advising on Wildlife Master Plan implementation. M. Gumal, C. Chin, M. Meredith

Conservation of wildlife in production forest in Ulu Baram. C. Chin, M. Meredith, J. Mathai, N. Jalaweh

Monitoring and conserving primates in Maludam National Park. J. Hon

Surveys of and setting priorities for orangutans in Sarawak. J. Rubis, M. Gumal

Expanding wildlife conservation training modules in Malaysia. M. Meredith, M. Gumal, C. Chin

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Bats and birds in Loagan Bunut National Park. J. Hon, D. Kong, M. Gumal

Taman Negara elephant conservation. J. Sompud, S. Hedges, M. Gumal

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#### **MONGOLIA**

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Assessment of wildlife trade in Mongolia. A. Fine, J. Wingard, P. Zahler

Mongolian saiga antelope conservation. A. Fine, J. Berger, K. Berger

Research on Mongolian gazelles in the Eastern Steppe. K. Olson, O. Daria

Landscape species selection for the Eastern Steppe region of Mongolia. A. Fine, O. Llamjav, K. Didier, G. Bryja, S. Townsend, K. Olson

Assessing threats to wildlife and traditional livelihoods on the Eastern Steppe of Mongolia. P. Zahler, T. Armstrong, O. Llamjav, K. Didier, Bolorsetseg

Mapping Important Bird Areas (IBAs) of the Eastern Steppe. P. Zahler, O. Llamjav

Marmot population assessment—identifying conservation strategies and management options. S. Townsend, P. Zahler, S. Strindberg, A. Fine

Community based wildlife conservation on the Eastern Steppe. A. Fine, T. Armstrong, O. Llamjav, Bolorsetseg

Community based pasture management on the Eastern Steppe. A. Fine, T. Armstrong, A. Winters, O. Llamjav

Collaborative wildlife protection program in the Nomrog Strictly Protected Area. A. Lynam, K. Olson, C. Jargalsaikhan, A. Fine

Disease at the interface of livestock, wildlife, and human health in Mongolia. A. Fine, P. Zahler, S. Osofsky, D. Joly, J. Tsao, G. Hickling, C. Krusekopf

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Intestinal parasites of livestock and Mongolian gazelle. K. Olson, Purevsuren, O. Daria, Bolorsetseg

## **Master plan for Malaysia**

Malaysia is an incredibly complex country with intricate geography, spectacular biodiversity, numerous cultures and ethnicities, and a complicated political system. Lucky for WCS, Melvin Gumal has the experience and skills to navigate this intricate terrain.

Melvin is the WCS-Malaysia Country Director, and has worked for 18 years on conservation in Malaysia. Rain-forest walks as an undergraduate hooked Melvin on the joys and beauty of biodiversity and convinced him of the need for wildlife conservation. After graduation, Melvin joined the Department of Forestry of the State of Sarawak, where he quickly rose to become the Head of Conservation Education for the National Parks. Melvin used this position not only to influence how wildlife conservation is taught to park visitors, but also to design the wildlife conservation curriculum taught in all government schools in Malaysia. Melvin also coauthored—with WCS staff Elizabeth Bennett, John Robinson, and Alan Rabinowitz—the *Master Plan for Wildlife in Sarawak*.

After several years of education and policy work, Melvin was ready to get his fingernails dirty again. He completed his PhD at Cambridge University on the roosting ecology of Malaysia's flying foxes, enormous fruit-eating bats. With a firm grasp of wildlife conservation in both the field and policy, he became WCS-Malaysia Country Director in 2003. Under Melvin's supervision WCS-Malaysia has expanded into peninsular Malaysia at Taman Negara, one of the most important forests in Southeast Asia; is working to conserve the last viable population of orangutans in Sarawak; and is engaging Malaysia's logging companies in adjusting their practices to be more ecologically sustainable.







## On forest patrol in Thailand

Anak Pattanavibool has been engaged in wildlife conservation and research in Thailand for more than 20 years. He began his career as a park ranger with the Wildlife Conservation Division of the Royal Forest Department, patrolling the lowland jungles of the Prince Chumporn Park Wildlife Sanctuary in southern Thailand. While on the frontline of wildlife conservation, Anak experienced both the hardships of arresting numerous poachers and illegal loggers and the joy of discovering the first breeding of helmeted hornbills.

After receiving his PhD in North America—on habitat fragmentation in northern Thailand, which revealed the unexpected importance of even tiny forest fragments as sources of food for a wide range of bird species, including hornbills—Anak returned to Thailand. This time, he managed a study of the ecology, distribution, and conservation of large mammals such as tigers, elephants, and gaur in the vast Western Forest Complex of the Tenasserim Mountains, one of the most important sites for wildlife in Thailand, if not all of Southeast Asia.

Anak has been Director of WCS-Thailand since 2004. He uses the widespread respect he has earned to influence management and law enforcement practices of protected areas in the Western Forest Complex and the Tenasserims.

### MYANMAR

Management of the Hukaung Valley Tiger Reserve of Northern Myanmar. T. Myint, S. Htun, A. Rabinowitz

Gibbon conservation through field studies and public-awareness in Hukaung Valley Tiger Reserve. W. Brockelman, T. Myint, S. Tun, A. Lwin

Irrawaddy dolphin conservation, Irrawaddy River. B. D. Smith, T. Tun

Northern Forest Complex (NFC) landscape project. A. Rabinowitz, W. Duckworth, T. Myint, S. Htun, M. Rao, T. Zaw, M. M. Oo

Elephant conservation in Hukaung Valley Tiger Reserve. T. Myint, S. Hedges, K. K. Kham

Turtle conservation. D. Hendrie, W. K. Ko, K. M. Myo

### PAKISTAN

Conservation education and biodiversity preservation in the Diamer and Gilgit Districts of Northern Pakistan. M. Khan, P. Zahler

Status and conservation of wildlife in Northern Pakistan. M. Khan

Four-country peace park initiative. G. Schaller, P. Zahler

### PAPUA NEW GUINEA

PNG biologist training for field techniques, project design, data analysis, and report writing. A. Mack, D. Wright, R. Sinclair, L. Salas

Hunting in the Crater Mountain Wildlife Management Area (Crater WMA). A. Mack, M. Kigl, J. Novera, K. Yhuange

Cave-dwelling flying foxes in the Crater WMA. K. Tau, D. Wright

Ecology of long-beaked echidnas in the Crater WMA. M. Opiang, D. Wright

Bird of paradise behavior in PNG. E. Scholes

Flora guide to Crater Mountain. D. Wright, V. Gei

Gap dynamics and tree regeneration. A. Arihafa, A. Mack

Infrastructure improvements to the Crater Mountain Research Station. A. Mack, R. Sinclair

Long-term avian demography in the Crater WMA. A. Mack

Long-term tree diversity and dynamics in the Crater WMA. D. Wright, A. Mack, M. Supuna

Manus Island surveys. A. Mack, P. Igag, M. Kigl

Megapode research and management. R. Sinclair, M. Samson

Phylogeography of lowland birds of New Guinea. A. Mack, J. Dumbacher

Darwin Initiative conservationist training. K. Sagata, M. Balke, A. Mack, D. Wright

Productivity of mangroves. E. Dus, A. Mack

Conservation of New Guinea raptors. L. Legra, A. Mack

Population biology of small mammals. E. Kaledemimo, D. Wright

Pitohou toxicity adaptations. J. Dumbacher, D. Levitis, S. Tomba, A. Mack

PNG frog diversity and distribution. S. Richards, C. Dahl

Nest boxes to mitigate tree cavity reduction effects. D. Warakai, A. Mack, D. Wright

Parrot nesting and ecology. P. Igag, A. Mack

Conservation education for PNG primary and secondary schools. L. Dori, S. Tui, D. Wright, R. Sinclair

### PHILIPPINES

Flying-fox conservation. T. Mildenstein

### RUSSIA

Siberian tiger project. J. Goodrich, N. Reebin, V. Melnikov, E. Gishko, D. Miquelle, E. Smirnov, A. Astafiev

Winter survey of tigers in the Russian Far East. D. Miquelle, D. Pikunov, Y. Dunishenko

Bears of the Sikhote-Alin. I. Seryodkin, A. Kostyria, J. Goodrich

Monitoring program for the Amur tiger. D. Miquelle, U. Dunishenko, D. Pikunov, V. Aramilev, P. Fomenko, G. Salkina, I. Nikolaev, V. Litvinov, I. Seryodkin

Resolving human-tiger conflicts in the Russian Far East. J. Goodrich, S. Zubtsov, N. Reebin, D. Miquelle

Using camera traps to monitor the Amur leopard. A. Kostyria, V. Aramilev, A. Reebin, D. Miquelle

Managing hunting leases for effective wildlife/tiger conservation. V. Aramilev, N. Kazakov, D. Miquelle

Tiger Friendly Certification: developing economic incentives for conservation. N. Kazakov, A. Breuer, D. Miquelle

Veterinary training in wildlife health, and developing a response team for carnivore-human conflicts. K. Quigley, C. Schoene, D. Armstrong, J. Goodrich, D. Miquelle

Transboundary planning and management of Chinese reserves for tiger and leopard conservation. E. Li, D. Miquelle, Y. Xie

Conservation and management of the bears of Kamchatka. J. Paczkowski, I. Seryodkin, G. Raygoredsky, D. Miquelle

Blakiston's fish owl research and conservation. J. Slaght, S. Surmach, D. Miquelle



## SOUTH PACIFIC

Surveys of Fijian invertebrates: testing the hypothesis of a Gondwanan origin for the Fijian biota. A. Cagiroba, Moala Tokota'a, E. Sarnat, A. Raikabula, S. Lal, D. Olson

Conservation and restoration of critically endangered Fijian tropical dry forest. M. Tuiwawa, G. Keppel, D. Olson

Landscape certification for logging operations as a tool for forest conservation in Fiji. L. Farley, A. Patrick, D. Olson

The impact of Pacific rats on the regeneration of dry forest and reproduction and foraging of Fiji crested iguanas on Yadua Island, Fiji. C. Morley

Remote forests of Fiji as refugia from alien rat and mongoose predation on endangered species. D. Olson, L. Farley, W. Naisilisili, A. Raikabula, C. Morley, J. Atherton

Conservation of the endangered Samoan maomao and manumea. J. Atherton, T. Tipamaa, T. Suaesi, L. Farley, D. Olson, U. Beichle

## TAJIKISTAN

Conservation of Marco Polo sheep and its landscape in the Pamirs. G. Schaller

## THAILAND

Conserving Indochinese tigers in Western Forest Complex of Tenasserim Range in Thailand. A. Pattanavibool, I. Arsanok, U. Karanth, Dept. of National Parks, Wildlife, and Plant Conservation

Conserving Asian elephant population and solving human and elephant conflicts in Kaeng Krachan National Park. P. Manopawitr, P. Pattanakaw, N. Khewwan, T. Chalondong, S. Hedges, Dept. of National Parks, Wildlife, and Plant Conservation

Conservation of the agile gibbon and siamang in the Halabala Forest Complex, southern Thailand. A. Pattanavibool, Dept. of National Parks, Wildlife, and Plant Conservation

## REGIONAL

CITES Monitoring the Illegal Killing of Elephants (MIKE). S. Hedges, A. Lynam

Monitoring Asian elephant populations and assessing threats: A manual for researchers, managers, and conservationists. S. Hedges, U. Karanth, M. D. Madhusudan

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Regional landscape ecology capacity building. E. Delattre

Setting priorities for the conservation and recovery of wild tigers: 2005-2010. E. Sanderson, J. Forrest, A. Heydlauff, J. Ginsberg, T. O'Brien, G. Bryja

## Latin America and the Caribbean

### ARGENTINA

Sea and Sky: A strategy for conserving open ocean biodiversity in the SW Atlantic. C. Campagna, C. Verona, V. Falabella, P. Filippo

Patagonia coastal zone conservation strategies. G. Harris, P. Yorio, P. D. Boersma, Fundación Patagonia Natural

Andean Patagonia Tehuelche Landscapes: San Guillermo, Payunia/Auca Mahuida, Tromen. A. Novaro, S. Walker, R. Baldi

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Seabird ecology and conservation in Patagonia. P. Yorio, F. Quintana, E. Frere, P. Gandini, A. Schiavini

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Ecology and conservation of the huemul deer. A. Vila

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Natural history and wildlife conservation. W. Conway

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### BELIZE

Wildlife research and protected areas planning in tropical forests. B. Miller, C. Miller

Neotropical bat conservation. B. Miller

Jaguar research and conservation. C. Miller

Monitoring jaguars in the Cockscomb Basin Wildlife Sanctuary. S. Silver, L. Ostro

### BOLIVIA

Biodiversity research and conservation in the Greater Madidi Landscape. R. Wallace, L. Painter, H. Gomez

Jaguar monitoring in Madidi. R. Wallace

Conservation and protected area management in the Bolivian Chaco. M. Painter, A. Noss, O. Castillo, E. Cuellar, L. Maffei

## Earth Dragon of China

The Chinese alligator, called *tu long* (earth dragon) by Chinese farmers, is teetering on the brink of extinction. Since the 1970s, the Chinese government has focused on captive breeding of alligators, all but giving up on the last groups in the wild. Beginning in 1997, WCS Conservationist John Thorbjarnarson spearheaded surveys that found fewer than 150 wild alligators, most living in tiny ponds in rice paddies. During the intervening years, WCS joined forces with East China Normal University and wildlife officials in Anhui, Zhejiang, and Shanghai provinces to renew hope for the future of this remarkable species outside of the breeding centers.

Restoring small areas of habitat and releasing captive-bred alligators is a recipe for success for this innocuous species. In 2003, WCS guided an experimental release of captive alligators into a protected pond in Anhui Province, sparking interest in the conservation of the species. The Chinese government has since undertaken similar projects in two other areas.

Meanwhile, the Bronx Zoo's Herpetology Department has been the leader of Chinese alligator captive breeding in the United States. This year, the Zoo sent 12 U.S.-born Chinese alligators back as part of a new conservation program in a much larger wetland, on Chongming Island at the mouth of the Yangtze River. These projects mark the end of a 7,000-year period of decline for Chinese alligators, and give new hope that China's one living "dragon" will survive.





# field projects

Jaguar monitoring in Kaa-Iya, Chaco. A. Noss, L. Maffei

Conservation training and capacity building. D. Rumiz

## BRAZIL

Mamirauá and Amanã Sustainable Development Reserves—management and conservation. H. Queiroz, A. R. Alves

Sustainable finance in Mamirauá. C. Quintela

Piagacu-Purus Sustainable Development Reserve. C. Pereira de Deus, R. da Silveira

Landscape species conservation and planning in the Brazilian Pantanal. S. Cavalcanti, M. Marmontel

Livestock depredation by jaguars and pumas in southern Pantanal. S. Cavalcanti

Rancher Outreach Program. R. Boulhosa

Implementation of management programs for the black caiman in the Brazilian Amazon. J. Thorbjarnarson

## CHILE

Conservation and research program for Tierra del Fuego. B. Saavedra, R. Muza

Conservation and research program for Bernardo O'Higgins National Park. G. Harris, B. Saavedra, A. Vila

Juan Fernandez Islands Seabird Conservation and Research. P. Hodum, M. Wainstein

## COLOMBIA

Ecology and conservation of biological diversity in the Central Andes of Colombia. C. Murcia, G. Kattan

Conservation leadership and training program and Ucamari Center for Excellence. C. Murcia, G. Kattan, Fundación EcoAndina

Design of a protected area system for the area of Riseralda / Technical Assistance-National Parks Unit. C. Murcia, G. Kattan, Fundación EcoAndina

Jaguar conservation and jaguar-livestock conflict in the Llanos. E. Payan

## COSTA RICA

Ecology of white-lipped peccaries and jaguars in Corcovado N. P. E. Carrillo

Consolidation of the National Protected Areas System. M. Boza

## CUBA

Reptile research and conservation in coastal habitats. J. Thorbjarnarson, R. Rodríguez Soberón, M. Alonzo Tabeth

Conservation of Ciénaga de Zapata. J. Thorbjarnarson, A. Chicchon

Conservation of the Cuban crocodile in the Zapata and Lanier Swamps, Cuba. J. Thorbjarnarson

Population ecology and management of the American crocodile in Cuba. J. Thorbjarnarson

## ECUADOR

Biodiversity research and conservation in the Yasuni-Napo Landscape. E. Suarez, G. Zapata, V. Utreras

## GUATEMALA

Community-based conservation and biodiversity monitoring in the Maya Forest. R. McNab, A. Rodríguez, R. García, V.H. Ramos

Scarlet macaw ecology and conservation. R. McNab

Institutional strengthening of Asociación Balam. R. McNab, B. Castellanos

## PANAMA

Conservation of the Darien. A. Carr III, R. Samudio, J. Carrion de Samudio

## PERU

Sustainable use and management of the vicuña. C. Sahley

Wildlife conservation in the Peruvian Amazon of Loreto. R. Bodmer, P. Puertas

Technical support to Tambopata protected areas complex authorities. R. Wallace

## VENEZUELA

Conservation of the Caura River Watershed. J. Ochoa, M. Bevilacqua

Fish ecology, use, and conservation in the Caura Watershed. F. Daza

Conservation of the Paraguana Region. J. Ochoa

Ecology and habitat use of spectacled bears. I. Goldstein

## REGIONAL

Amazonian conservation. M. Painter, F. Marques, E. Venticinque

Flamingo ecology and conservation. F. Arengo, P. Marconi, P. Gandini, O. Rocha, Grupo para la Conservación de Flamencos

Conservation science training. P. Feinsinger

Conservation of the Mesoamerica Biological Corridor. A. Carr III

Jaguar conservation program small grants. K. Conforti

## Marine

### GLOBAL

Conservation of Atlantic humpback dolphins. H. Rosenbaum, S. Glaberman, T. Jefferson, T. Collins, G. Minton, V. Peddemors, R. Baldwin

Coral reefs and climate change. A. Baker

Genetic diversity and population structure among north Atlantic right whales from the 16th century to now. H. Rosenbaum

Global coral reef conservation program. A. Baker, S. Campbell, T. McClanahan



## A big fish story

Based in Eugene, Oregon, Conservation Fisheries Scientist Dan Erickson works to protect vulnerable populations of sturgeon. Dan travels the globe to study these fascinating giant prehistoric fish, which migrate great distances across oceans and rivers to feed and reproduce. Sturgeon have existed for approximately 200 million years, but today, human activities threaten their survival. Most of the world's 25 species are listed as threatened or endangered because of legal and illegal overfishing, loss of spawning habitat, and poor water quality.

Dan began his work with WCS in 2000 on green sturgeon in Oregon's Rogue River, a Wild and Scenic River. Dan's team identified important habitats and serious threats in the region, and by influencing management and policy, reduced green sturgeon mortalities along the Pacific coast of the United States.

Employing the Rogue River project as a model, Dan has migrated east to where New York's historic harbor acts as a gateway not only to immigrants from around the world, but also to sturgeon and their conservation. Passing under the Verrazano Bridge each spring and summer, Atlantic sturgeon travel far up the Hudson River to spawn. Teaming with state and federal conservation agencies, Dan is using high-tech satellite tags to track sturgeon as they swim out into the Atlantic Ocean each fall.

Meanwhile, Dan is also visiting Kazakhstan and the Russian Far East to study beluga and kaluga sturgeon, respectively.



Human footprint in the marine environment. C. D'Agrosa, E. Sander-son, L. Lauck, C. Recchia

ISACH: A coordinated regional effort and advanced database for humpback whale conservation. H. Rosenbaum, P. Ersts, K. Findlay

Molecular investigation of the potential hybrid origin of a cetacean species of intermediate nature: *Stenella cymene*. H. Rosenbaum

The role of genetic diversity in the recovery of the highly endangered north Atlantic and north Pacific right whale. H. Rosenbaum

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Developing an open ocean conservation area for the protection of marine mammals and seabirds: A Park of Sea and Sky. C. Campagna, C. D'Agrosa, V. Falabella

#### BANGLADESH

Effects of declining freshwater supplies on Ganges river dolphins, *Platanista gangetica*. B. Smith

Cetaceans of Bangladesh: Conserving a regional hotspot of species diversity and abundance with local communities and institutions. B. Smith

#### BELIZE

An evaluation of Caribbean shark species. D. Chapman, E. Pikitch

Building a constituency for marine conservation in Belize. J. Gibson, C. Acosta, R. Graham, H. Renken, E. Sala

Conservation of Goliath grouper and large, highly mobile fish populations. R. Graham

Conservation of Nassau grouper spawning aggregations. E. Sala, J. Gibson, S. Hoare

Coral reef and algae population dynamics and reef restoration: Understanding the influence of nutrients and organic matter on reef erosion and algal growth. T. McClanahan

Coral reef ecology in the Caribbean. B. Steneck

Development of monitoring techniques for marine reserves and a long-term atoll-monitoring program for Glover's Reef. C. Acosta

Establishing a socioeconomic monitoring program for Glover's Reef Atoll, Belize. J. Gibson

Glover's Reef living seascape: Safeguarding marine resources and rural livelihoods in Belize. J. Gibson, C. D'Agrosa, S. Hoare

Glover's Reef Marine Research Station (GRMRS). A. Cros, B. Wainwright

Glover's Reef Marine Research Station – A resource for greater understanding of the Mesoamerican Barrier Reef. A. Carr, A. Cros, B. Wainwright

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Promoting sustainable fisheries through demonstration of Glover's Reef Marine Reserve. J. Gibson, C. Acosta

Spatial conservation database for Glover's Reef Marine Reserve. P. Mumby, H. Renken

Vulnerability assessment of sharks and rays in Southern Belize. R. Graham

#### FIJI

Conservation of the Vatu-i-Ra Seascape. D. Olson, L. Farley, M. Marnane, K. Walls, E. Rupeni

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#### GABON

Cetacean conservation and research in Gabon. H. Rosenbaum, T. Collins

Research and conservation of Atlantic humpback dolphins. H. Rosenbaum, T. Collins

#### INDIA

Investigating the status and ecology of Ganges river dolphins, *Platanista gangetica*, and Ayeyarwady dolphins, *Orcaella brevirostris*, in the Sundarbans Delta. B. Smith

Strengthening dolphin conservation activities in the Vikramshila Gangetic Dolphin Sanctuary. B. Smith

Training for south Asian scientists and an assessment of coastal cetacean populations in the Bay of Bengal. B. Smith

#### INDONESIA

Rebuilding effective marine management at Karimunjawa National Park. S. Campbell, M. Marnane, J. Wibowo

Tsunami response in Aceh. S. Campbell

#### KAZAKHSTAN

Pilot study on heluga sturgeon in Kazakhstan. D. Erickson

#### KENYA

Conservation research on coral reefs. T. McClanahan

Integrating adaptive management techniques into marine reserve management system. T. McClanahan

Sea Cucumbers, a poorly understood, but important coastal resource: national and regional analyses to improve management. N. Muthiga

#### MADAGASCAR

An integrated approach to humpback whale and marine mammal



## Protecting coastal Patagonia

Graham Harris leads WCS's efforts in Argentina, Chile, Uruguay, and the Falkland/Malvinas Islands—collectively known as the “Southern Cone.” A veterinarian by training, as well as wildlife author and artist, Graham began working with WCS in his native Patagonia in southern Argentina nearly 25 years ago. The ecologically diverse area is home to the threatened Magellanic penguin, the beautiful dolphin gull, the rare Olrog's gull, the sinister-looking southern giant petrel, the vulnerable rockhopper penguin, and the colossal southern elephant seal, to name just a few species.

Today, Harris directs the Patagonian Coastal Zone Management Plan, a \$5.2 million project funded by the Global Environmental Facility and the United Nations Development Program and carried out by the local nongovernmental organization Fundación Patagonia Natural. Widely regarded as one of the most successful projects of its kind, this Management Plan began as a WCS initiative in 1993. It builds on three decades of research carried out by WCS researchers. As a result of Harris's commitment to conservation and his team's work, very few birds are at risk of being oiled at sea off Patagonia. Strong management plans, new devices that reduce the impact of commercial fishing on seabirds, and greater community involvement in coastal zone decision-making are a few of the WCS successes along the coast of Patagonia.



- research and conservation: photographic identification, conservation genetics, acoustics, GIS analysis and satellite telemetry. H. Rosenbaum, N. Andrianarivelo, Y. Razafindrakoto, C. Pomilla, S. Cerchio, M. Leslie
- Conservation and sustainable resource use in the Antongil Landscape of Madagascar. S. Harding, H. Crowley
- Demonstration of the benefits of marine reserves at Andavadoaka. S. Harding, B. Randriamantsoa
- Developing conservation strategies for the shark fishery of Antongil Bay. M. Jonahson, H. Randriamahazo
- Developing sustainable conservation-oriented whale watching. H. Rosenbaum, Y. Razafindrakoto, S. Nguesso, V. Rasoamampianina, S. Cerchio
- Development of an Integrated Coastal Zone Management Plan for Antongil Bay. B. Randriamantsoa, S. Harding
- Field Guides: Comprehensive guide to marine mammals of Madagascar and the southwestern Indian Ocean and a comprehensive guide to marine mammals of the Gulf of Guinea. H. Rosenbaum, S. Cerchio, T. Collins
- Improving the monitoring and management of the Masoala marine parks. S. Harding, B. Randriamantsoa
- Investigating the fish diversity and marine ecology of the Sahamalaza Biosphere Reserve. H. Randriamahazo, B. Randriamantsoa
- The impact of hunting and incidental catch of small cetaceans. S. Cerchio, H. Rosenbaum, Y. Razafindrakoto, N. Andrianarivelo
- Madagascar Marine Guide. S. Harding
- MYANMAR**
- Development and promotion of a science-based strategy for conserving Irrawaddy dolphins in the Ayeyarwady River, Myanmar. B. Smith
- Establishment of a protected area for Irrawaddy dolphins and a human-dolphin cooperative fishery in the Ayeyarwady River of Myanmar. B. Smith
- NEW ZEALAND**
- Great white shark conservation. R. Bonfil
- Population connectivity and migratory movements of great white sharks from New Zealand. R. Bonfil
- NICARAGUA**
- Hawksbill rookery conservation in Pearl Cays, Nicaragua. C. Lagueur, C. Campbell
- Marine turtle research and conservation on the Caribbean coast of Nicaragua: hawksbill, green, and loggerhead. C. Lagueur, C. Campbell
- Monitoring and characterizing hawksbill sea turtle nesting populations, foraging aggregations, and migratory patterns through beach surveys, and mark/recapture. C. Lagueur, C. Campbell
- Sea turtle management plan for Nicaragua. C. Lagueur, C. Campbell
- Tourism workshop. C. Lagueur, C. Campbell
- PANAMA**
- Ecology and migration of Bocas del Toro sea turtles. A. Meylan, P. Meylan
- Hawksbill turtle population recovery in the Comarca Ngöbe-Bugle Chiriqui Beach/Escudo de Veraguas and the Bastimentos Island National Marine Park. A. and P. Meylan
- PAPUA NEW GUINEA**
- Conservation of coastal marine resources in Papua New Guinea. M. Marnane, D. Afzal, H. Perks
- Development of a training program for marine scientists and coral reef conservation. M. Marnane, D. Afzal, H. Perks
- Improving the ecological and economic sustainability of coral reef harvesting for Betel-nut lime production at Andra Island, Manus Province. M. Marnane, D. Afzal, H. Perks
- Socioeconomic aspects of traditional coral reef management in Papua New Guinea. D. Afzal, J. Ben, H. Perks
- REGIONAL**
- Arctic bowhead whales. H. Rosenbaum
- Bowhead whale genetic diversity and population structure: An exploration of human and climate induced changes in genetic variation. H. Rosenbaum, G. Amato
- Ecosystem-based and community-based coastal fisheries management in Melanesia. M. Marnane, H. Perks
- Effects of coral bleaching on reef fish, fisheries, and ecosystem service in the Western Indian Ocean. T. McClanahan
- RUSSIA**
- A workshop to develop and implement research, education, and management plans for the conservation of Kaluga and Amur sturgeon. D. Erickson
- Identifying critical habitat for the development of protected areas to prevent the extinction of endangered Sakhalin sturgeon in the Russian Far East. D. Erickson
- UNITED STATES OF AMERICA**
- Atlantic sturgeon conservation and recovery along the U.S. East Coast. D. Erickson
- Compiling georeferenced sightings data for green sturgeon. D. Erickson
- Marine migration and estuary use of green sturgeon in the Rogue, Klamath, and Sacramento rivers. D. Erickson
- Mitigating jet boat impacts on green sturgeon in the Rogue River. D. Erickson
- Research for the recovery of Atlantic sturgeon in the Hudson and Alutamaha rivers. D. Erickson
- Use of seamount habitat by economically important whale sharks and manta rays in the Flower Garden Banks National Marine Sanctuary. R. Graham
- North America**
- TRI-STATE NEW YORK METROPOLITAN REGION**
- Working with local planners to integrate biodiversity conservation in Connecticut and New York (Croton-to-Highlands, Wallkill Valley, and Farmington Valley.) M. Klemens, H. Gruner, N. Miller, J. Schmitz
- Eastern Westchester Biotic Corridor. M. Klemens
- Public-private land stewardship in Rockefeller State Park Preserve and private lands. M. Klemens, N. Miller, K. Ryan, J. Vellozzi
- Assessing needs and opportunities for biodiversity conservation through local land-use planning in New Jersey. M. Klemens, N. Miller, J. Schmitz
- Counteracting the effects of sprawl through "Smart Growth" local land-use planning. M. Klemens
- Conservation of amphibians and reptiles in the tri-state NY Metro Region. M. Klemens, H. Gruner, K. Ryan
- ADIRONDACKS**
- Boreal birds and their habitats in the Adirondacks. J. Jenkins, M. Glennon
- Bicknell's Thrush on Whiteface Mountain Ski Area. M. Glennon, L. Karasin
- Adirondack Communities and Conservation Program. Z. Smith, L. Karasin, H. Kretser
- Adirondack Living Landscapes Program. M. Glennon, A. Keal
- Adirondack Cooperative Loon Program. N. Schoch, A. Sauer, M. Glennon, V. Trudeau, D. Adams, D. Evers, E. Realbuto
- Adirondack Atlas. J. Jenkins, A. Keal
- Black Bear Education, Awareness and Research Program (BBEAR). Z. Smith, M. Glennon, L. Karasin
- Using Geographic Information Systems (GIS) as a community and conservation planning tool. A. Keal
- Local impacts of climate change and changes in land use on water quality and the winter economy in the Adirondacks: A case study of the Consortium for Atlantic Regional Assessment. A. Fisher, R. Dempsey, L. Karasin
- Developing a waterfront revitalization strategy for the towns of Clifton and Fine. Z. Smith, L. Karasin, A. Keal, R. Curran
- Social and ecological implications of low-density, exurban development in the Adirondacks. H. Kretser, M. Glennon
- SOUTHERN APPALACHIANS**
- Use of bridges and road structures by wildlife in Virginia. W. McShea and partners
- The interaction of deer and invasive plant species on forest biodiversity. W. McShea and partners
- White-tailed deer overpopulation, impacts, and movement. W. McShea and partners
- Indiana bat (*Myotis sodalists*) ecology. W. McShea and partners
- High elevation bird survey. W. McShea and partners
- Clarke County, Virginia, biodiversity land-use survey. W. McShea and partners
- CANADA**
- Conservation planning in Ontario's Northern Boreal Forest. J. Ray
- Impact of development on fresh water fish in Ontario Northern Boreal Forest. D. Browne
- Wolverine and caribou research, conservation, and recovery in northern Ontario. J. Ray
- Building capacity to use GIS as a tool for landuse planning among Ontario's Northern First Nations. G. Woolmer
- Human Footprint analysis in the Northern Appalachians. G. Woolmer
- Trans-boundary conservation planning in the Northern Appalachians. J. Ray and G. Woolmer
- Northeastern mesocarnivore initiative. J. Ray
- Nahanni focal species studies: Redesign of a National Park and World Heritage Site. J. Weaver
- Crowsnest Pass Highway: A crucial link for carnivores. J. Weaver, P. Paquet, and C. Apps



Taku River Tlingit First Nations capacity building. D. Reid

Hares and lynx in boreal British Columbia. D. Reid

Effects of climate change in the Far North. D. Reid

## **GREAT LAKES**

Lake Superior wolf conservation. A. Treves, L. Naughton

## **PACIFIC WEST**

Wildlife, fire, and forest management. S. Zack, K. Farris, and partners

Effect of sudden oak death syndrome on wildlife in the Pacific West. K. Fischer, L. Hadj-Chikh

Ecology and conservation of the Pacific fisher on the Hoopa Valley Reservation. S. Matthews and partners

Woodpeckers and snag dynamics. S. Zack, K. Farris, and partners

Riparian restoration, beavers and songbirds. S. Zack, H. Cooke, and partners

Conservation of salmon-driven ecosystems. S. Zack

## **ARCTIC COASTAL PLAIN**

Tundra nesting birds, predators, and development in the Arctic Coastal Plain. S. Zack, J. Liebezeit, and partners

Exploration of Biologically Special Areas in the National Petroleum Reserve. S. Zack, J. Liebezeit.

## **WESTERN MOUNTAINS**

Wolverine ecology and conservation. R. Inman, K. Inman, and partners

Cougar Ecology and cougar/wolf/bear conservation. T. Ruth, P. Buotte, and partners

Carnivore connectivity in the Centennial Mountains. J. Beckman

Pronghorn migration conservation. J. Berger, K. Berger

Conservation in native communities. J. Hilty, S. Grassel

Setting priorities for wildlife conservation. C. Groves, B. Brock, A. Toivola, and partners

Impacts of motorized recreation on wildlife. R. Inman, C. Groves

Wildlife and energy development in the Rocky Mountains. J. Berger, K. Berger, J. Beckmann

Highway impact on wildlife on the Flathead reservation. W. Mailliet, J. Hilty

## **NEW MEXICO**

New Mexico black bear conservation. C. Costello

## **CROSS-CONTINENTAL**

Development of the large carnivore guild model. A. Rabinowitz

Planning for ecological recovery of the North American Bison. W. Weber, K. Redford, E. Sanderson, K. Minkowski, E. Fearn

## **Central**

### **NEW YORK WASHINGTON, D.C.**

Zoological Society of London collaboration. M. Hatchwell

Kaplan Awards Program for cat conservation. L. Hunter, N. Williams

Design and development of the landscape species approach to site-based conservation. K. Didier, S. Strindberg, A. Vedder, D. Wilkie, E. Sanderson, J. Forrest, G. Bryja

Engaging local people in wildlife conservation: A survey of WCS approaches. A. Vedder, D. Wilkie

People and Parks: Assessing the human welfare impacts of establishing protected areas for biodiversity conservation. D. Wilkie

The Mannahatta Project. E. Sanderson, G. Bryja, T. Bean

Historical ecology of the lower Bronx River. E. Sanderson, D. LaBruna

Monitoring of large wildlife directly through high spatial resolution remote sensing: experimental and in situ approaches. S. Bergen, E. Sanderson

Decision support for the Convention on Biological Diversity 2010 Goal: Guidance on the application of remote sensing techniques for measuring the rate of biodiversity loss. E. Sanderson, S. Bergen, K. Didier, J. Forrest

Conservation planning outside of protected areas: using landscape species in Laikipia-Sambura, Kenya. K. Didier and D. Wilkie

Applications of the human footprint to global conservation policy. E. Sanderson, L. Kruger, J. Forrest, G. Bryja

BP Conservation Awards Programme. J. Robinson, W. Banham, L. Duda

Graduate Fellowship Program (Beinecke African Scholarships, Christensen Conservation Leaders Scholarships, Robertson Big Cat Conservation Fellowships, Starr Tiger Conservation Fellowships). M.L. Penn, T. Parkinson

International Development Program. W. Banham, L. Duda

MBA Links. W. Banham, L. Duda

Research Fellowship Program. M.L. Penn, K. Mastro



## **Too small . . . too narrow**

Established in 1972 and declared in 1978 as the first World Heritage Site by the United Nations, the Nahanni National Park Reserve is located along the Southern Nahanni River, one of North America's wildest waterways, in Canada's Northwest Territories. But the reserve protects only one-seventh of the watershed.

The park was established initially to protect magnificent Rainbow Falls from dam development, with the intention of extending the park to protect a large portion of the watershed, and thus its breathtaking scenery and outstanding wildlife, including grizzly bears, caribou, and Dall's sheep. In 2002, the Canadian Government renewed this commitment as part of its Action Plan for National Parks.

This year, WCS conservationist John Weaver completed a four-year wildlife study, which clearly demonstrates that the existing park footprint—less than five miles wide in some sections—does little to protect the needs of these wide-ranging species. Weaver has recommended that the entire watershed be protected to maintain the integrity of the greater Nahanni ecoregion. This recommendation is supported by the Dehcho First Nation, whose traditional use area spans a large portion of the watershed and who have called for the protection of the entire drainage basin in their land use plan. Parks Canada (the federal parks agency), which supported much of Weaver's work, is incorporating the findings of this seminal study into their final recommendations.

Park expansion will help ensure that the Nahanni River watershed remains wild and untouched by looming threats of development, including the Mackenzie Pipeline and associated infrastructure and mining interests.

The Public Affairs Division helps to unify and focus the vital WCS programs of animal care and exhibition, environmental education, and international conservation through a number of critical gateways. Utilizing a variety of audiences, the division works with community groups to restore the Bronx River to a healthy wildlife habitat and recreation site; produces films that encourage congressional representatives in Washington, D.C. to fund important conservation legislation; produces advertising materials that drive attendance to the WCS zoos and aquarium; helps craft policies to inform the public about WCS's work on avian influenza and other issues; brings together media and scientists to spotlight WCS efforts to save wildlife and wild lands locally, nationally, and internationally; and connects people with conservation through corporate partnerships, enhanced zoo and aquarium visitor experience, and event planning.

## Government and Community Outreach

Reports of avian influenza dominated the media, as WCS undertook wildlife health and public policy efforts to help combat the deadly H5N1 strain. Public Affairs and WCS Wildlife Health staff worked closely with members of Congress, including Senator Joseph Lieberman and Representatives Nita Lowey and Rosa DeLauro, to develop an early warning system for pandemic avian influenza outbreaks through a WCS-led network for monitoring disease in wild birds called GAINS (Global Avian Influenza Network for Surveillance). WCS received \$6 million in initial funding for GAINS from the United States Agency for International Development (USAID) and the Centers for Disease Control. GAINS aims to detect the virus in wild migratory and resident birds, identify new strains of the virus that could be used to update vaccines, and create a database to share information on this and other pathogens.

This year, WCS was once again able to restore New York City operating support of approximately \$18.5 million and raise \$12.6 million for capital projects at the Bronx Zoo, New York Aquarium, and Prospect Park Zoo, despite it being a year of many changes in the City Council. As part of the WCS City Council Outreach Program, more than 90 WCS staff volunteered to meet with or contact their council members to urge restoration of cultural funding and support for WCS budget priorities. In addition, WCS secured \$5 million in federal support for the Center for Global Conservation, increasing total support for the center to \$12 million.

Thanks to more than 6,200 e-mails generated in one week by WCS supporters, New York State leaders passed a \$225 million budget for the Environmental Protection Fund (EPF), up 50 percent from the previous year. As a result, New York's open spaces, air, water, biodiversity, endangered species, and environmental education-based living museums will be protected for another year. An im-

portant part of the EPF, the Zoos, Botanical Gardens and Aquariums (ZBGA) program received a funding increase, to \$7.5 million. ZBGA provides operating support to New York's zoos, botanical gardens, aquariums, arboretums, and nature centers, including the Bronx Zoo and New York Aquarium. WCS received more than \$2 million in ZBGA funding this year and expects more in the coming year with the expanded program.

In March, WCS Zoo and Aquarium directors visited their elected representatives in Washington, D.C. during the Association of Zoos & Aquariums's annual Legislative Conference and Congressional Reception. Signatures collected at WCS facilities in support of federal funding for some of the world's most vulnerable species of wildlife were added to petitions from around the country and presented to Congress. Prospect Park Zoo Director Don Moore, Queens Zoo Director Robin Dalton, and New York Aquarium Director Paul Boyle met with New York congressional offices and requested \$2 million for each of the species funds established for rhinos, tigers, great apes, African elephants, Asian elephants, and sea turtles.

In May, renowned actress and WCS Trustee Glenn Close joined conservationists and congressional representatives in Washington, D.C. at the debut of the WCS production *Living with Predators*. Created with the support of several other conservation organizations, the 15-minute film chronicles the plight of lions, jaguars, wild dogs, wolves, and other great cats and rare canids that come into conflict with people. Threats to large predators include loss of habitat and prey, disease, poaching, genetic isolation, and direct conflicts with humans and livestock. WCS has been working with the congressional International Conservation Caucus to pass the Great Cats and Rare Canids Act. This bill will provide crucial U.S. funding to international conservation efforts on behalf of 13 species. The premiere of *Living with Predators* on Capitol Hill was so successful that copies of the film will be distributed to all U.S. embassies, consulates, and USAID missions.

As part of a continuing partnership with Congressman José E. Serrano and the National Oceanic and Atmospheric Administration (NOAA) to restore the Bronx River, WCS worked with officials, biologists, and citizen's groups, including the New York City Parks Department and the Bronx River Alliance, to reintroduce alewife herring. The species vanished from the river as early as the 1600s, when dams blocked access to spawning grounds. In March, the team released hundreds of the silvery fish into

**On March 21, an alewife herring reintroduction project was launched with NOAA and the New York City Parks Department Natural Resources Group to reestablish an historic migratory route (opposite, Congressman José E. Serrano, who is dedicated to restoring the natural habitat of the Bronx River, releases the fish).**



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the river on the grounds of the Bronx Zoo. Like salmon, river herring hatch in freshwater and swim out to sea, returning as adults to spawn. Alewives are important food items for striped bass and bluefish, herons and ospreys, and seals and other mammals.

WCS established the Special Needs Access Program (SNAP) and Community Access Program (CAP). SNAP provides zoo access to individuals who are handicapped, living in shelters or foster care, and participating in structured social support or low-income programs. Through CAP, a pilot program, WCS began reaching out to about 50 local youth and senior citizen nonprofit organizations, inviting them to explore their backyard at the Bronx Zoo. An educational guided tour is included in the package.

### Media Outreach

The WCS relationship with National Geographic Society grew steadily. Production began on two films featuring WCS work in Gabon and Tierra del Fuego. Five WCS segments aired on National Geographic's *Wild Chronicles* on PBS, including the series premiere with an exclusive on the discovery of gorilla tool use. National Geographic's *World Talk* on XM Satellite Radio continues to broadcast insightful interviews with WCS staff. At the Bronx Zoo, Cesar Millan, star of National Geographic Channel's *The Dog Whisperer*, helped open the African Wild Dog exhibit.

WCS initiated a new partnership with WNBC, which resulted in two *Jane's New York* specials hosted by anchor Jane Hanson. The specials spotlight the historic Bronx Zoo and provide a first look at the new *Madagascar!* exhibit. This partnership will continue to grow and promote WCS exhibits, scientists, and projects on WNBC and its digital networks.

AOL's Kids Online began broadcasting their children's radio show, *Radio KOL*, from the Tisch Children's Zoo at the Central Park Zoo. Hosted by zany DJ Rick Adams, *Radio KOL* reaches more than one million unique listeners each week.

Other programs featuring WCS staff and facilities ran the gamut from the stately *State of the Planet's Wildlife* hosted by Matt Damon on PBS, to a humorous skit featuring the Bronx Zoo bears and senior keeper Jeff Munson on Comedy Central's *The Colbert Report*. Food diva Rachael Ray also got into the act, preparing treats for the polar bears at Central Park Zoo for a segment on her new, nationally syndicated talk show.

Non-broadcast projects included Gateways, a beautiful video tribute to WCS activities around the globe, which will be used to enhance fund-raising activities.

Conservation Communications realized extensive media coverage for many WCS projects. In the Republic of Congo's Mbeli Bai, WCS researcher Thomas Breuer wit-







nessed and photographed wild gorillas using tools for the first time ever. His discovery was featured on ABC's *Good Morning America*, in the *New York Times*, and made the debut episode of *Wild Chronicles*. Another big story featured the work of Ramón Bonfil, who tracked a great white shark more than 12,000 miles from South Africa to Australia and back again, farther than any other shark to date. This story was carried by the Associated Press, Reuters, BBC, and countless local outlets around the world. In addition to new findings, two stories from 2005 returned for second harvests. The Laotian rock rat, discovered in 2005, was found to be quite ancient—in the fossil record from 11 million years ago—and just as popular with the media this year. Also discovered in 2005 was Tanzania's Kipunji monkey. In 2006, it was found to represent a new genus, a reclassification that sent the monkey back into the headlines.

Other noteworthy stories featuring WCS projects included camera-trap photos of a mother cheetah and her cubs from Iran, efforts to save Mongolia's rare wildlife, and the importance of migratory corridors in western North America for the continent's speediest terrestrial mammal, the pronghorn. Elizabeth Bennett and her work to limit the unsustainable trade in wildlife were profiled in the *New York Times*. Representatives of the Field Veterinary Program were featured in numerous media outlets on

**Reports of avian influenza dominated the media, as WCS undertook wildlife health and public policy efforts to help combat the deadly H5N1 strain (opposite: Field Veterinary Program Director Billy Karesh). Above: renowned actress and WCS Trustee Glenn Close, Rep. Tom Udall (D-NM), co-chair of the House International Conservation Caucus, and WCS Executive Director of Science and Exploration Alan Rabinowitz in Washington, D.C. at the debut of the WCS production *Living with Predators*.**

the roles of both wild and domesticated birds in avian influenza, including the Associated Press (AP), *Washington Post*, *International Herald Tribune*, and ABC's *Primetime*.

*Wildlife Conservation* magazine turned the spotlight on WCS's long history of scientific exploration and conservation in a special Great Explorations issue. The June 2006 issue highlighted the Bronx Zoo's new African wild dog exhibit, and the vital studies of this threatened predator being conducted by WCS field scientists and zoo curators.

The African Wild Dog exhibit caught the attention of the *Journal News*, *Daily News*, *New York Post*, *Bronx Times*, and other print outlets. Photos of the dogs were circulated via the AP wire service and the *New York Times* heralded the energetic canines with Metro Section coverage. The Bronx also celebrated the Children's Zoo's twenty-fifth birthday bash, covered by four television stations and several feature articles. The *TODAY Show*, *Good Morning America*, *Good Day New York*, and WB-11 showcased grizzlies, butterflies, and Holiday Lights in the Bronx, The Tisch Children's Zoo animals at Central Park, and aquatic life from the Aquarium's new Glover's Reef. *Career World* magazine interviewed Bronx Zoo Curator of Ornithology Christine Sheppard, and featured her on their cover. *Mom and I* magazine profiled Aquarium Trainer Martha Hiatt. CNN's Jeannie Moos reported on the Queens Zoo's spectacled bears with Scott Silver, *Time Out On Demand* reviewed Prospect Park Zoo as a great day trip, the pages of *Elle Girl* were adorned with Central Park Zookeeper Alex Humphries, and *LIFE* magazine carried an interview with keeper Kristine Keating.

Central Park Zoo Director Dan Wharton brought the house down (again) with an interview on *The Daily Show with Jon Stewart*. But the stars of media coverage are always our amazing animals, from gorilla babies to Bernie the harbor seal, to penguin couple Roy and Silo, to baby colobus Kima, named through a contest on the *TODAY Show* and headlined on *NBC Nightly News*.





The Food Channel's diva chef Rachael Ray (above) prepared treats for the Central Park Zoo polar bears during Chill Out weekend. The segment aired on her new, nationally syndicated talk show. AOL's Kids Online began broadcasting its children's radio show, *Radio KOL*, from the Tisch Children's Zoo at Central Park Zoo—hosted by zany DJ Rick Adams (left). The Corporate Partnerships Department created a benchmark program with new partner Fisher-Price®, which included the Grizzly Goodies Corner™ picnic area and food stand at the Bronx Zoo (opposite, bottom: opening day with Bronx Zoo Director Jim Breheny). This year's advertising campaign for the Bronx Zoo, *Why Not Today?*, featured billboards such as this one for the new African Wild Dog exhibit (opposite, top).





## Marketing, Sales, and Corporate Partnerships

The Marketing Department shifted tactics to help deliver on an aggressive attendance-driving strategy, which included targeted print efforts in Westchester County weekly journals, radio campaigns for events, and promotions for limited-time discount ticket offers. In May, media sponsor the *Daily News* featured a cover sweepstakes for the Children's Zoo's twenty-fifth birthday. The program gave away 25,000 tickets for families to visit the Bronx Zoo, and elicited a more than 30 percent redemption rate. These initiatives helped push the Bronx Zoo and New York Aquarium over projected attendance goals for the second year in a row.

The revamped Group Sales program launched with a robust online ticketing system offering an e-consignment option for corporations. Corporate employees can purchase and print admission tickets with a predetermined discount online at their convenience. One hundred plus

corporations are participating; plans call for that number to increase dramatically in the coming year.

More than 50 public events were held at the five WCS parks, helping to drive attendance, gain high-profile media coverage, and enhance the guest experience. Opening Night at Holiday Lights garnered coverage on all of the major metropolitan area television stations. Private events continued to orchestrate successful outings—from weddings, bar mitzvahs, and retirement parties to corporate sales meetings, retreats, and annual galas.

Corporate Partnerships created a benchmark program with new partner Fisher-Price®. With the cooperation of Living Institutions and Business Services, the crosscutting, collaborative sponsorship included refurbishment of a picnic area and food stand at the Bronx Zoo. The branded area will provide guests with kid-friendly seating, special “sweets” menu options, and fun and interpretive graphics that revitalize the grizzly bear exhibit.



# financial report

The Wildlife Conservation Society closed the fiscal year ending June 30, 2006 with an operating surplus, as operating revenue exceeded expenditures by \$896,000. Our budget-balancing efforts are succeeding through increasing gifts and grants from a variety of sources, strong attendance and related revenue, our growing endowment, continued support from the City of New York, and a careful eye on expenses.

Operating revenue and support increased 8 percent from the prior year to a new total of \$165.5 million. Programmatic support through private contributions, federal agency grants, and other governmental and nongovernmental sources totaled \$62.5 million and provided 38 percent of our revenue. The five WCS wildlife parks enjoyed the highest attendance in the past five years, as 4.2 million people visited our zoos and aquarium. Income from gate admissions and exhibits, and the contribution from visitor services—food, merchandising, and parking activities—totaled \$44.5 million, a 16 percent increase and another record high, reflecting strong attendance, increased admission fees, and service improvements. The City of New York provided \$26.8 million for park operations, driven by the higher cost of utilities provided by the City to the Bronx Zoo and the New York Aquarium. Investment income for operations totaled \$17.4 million, a rise of \$1.8 million or 11 percent, thanks to the growth of our endowment from new gifts and strong investment returns over the past several years.

Operating expenditures totaled \$164.6 million. Program services expenditures and on-site visitor related costs, were \$141.2 million, increasing nearly 8 percent. Expenditures for International Conservation activities grew 4 percent, and exceeded the \$50 million mark. Expenditures in our Living Institutions—the Bronx Zoo, the

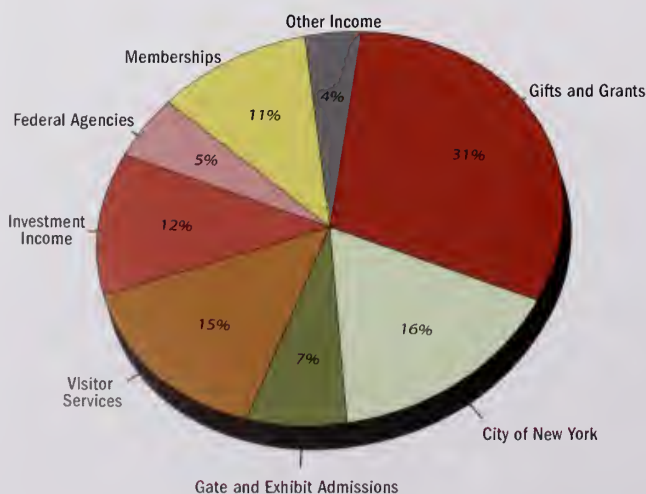
New York Aquarium, and the City Zoos—totaled \$77.4 million, 10 percent higher than the prior year.

WCS is a labor-intensive organization and continues to absorb increases in staff costs, most notably higher required pension contributions and other retiree benefits and health insurance costs. Non-personnel expenses rose as well, driven by higher energy costs and increased spending on repair and maintenance in our parks. Administrative and support services, including fundraising and membership expenses were \$20.7 million, as selective investments continue to be made in financial, legal, fundraising, and other administrative services to effectively manage our growing programmatic activities in New York and throughout the world. Even so, support services make up a lean 13 percent of the expense base.

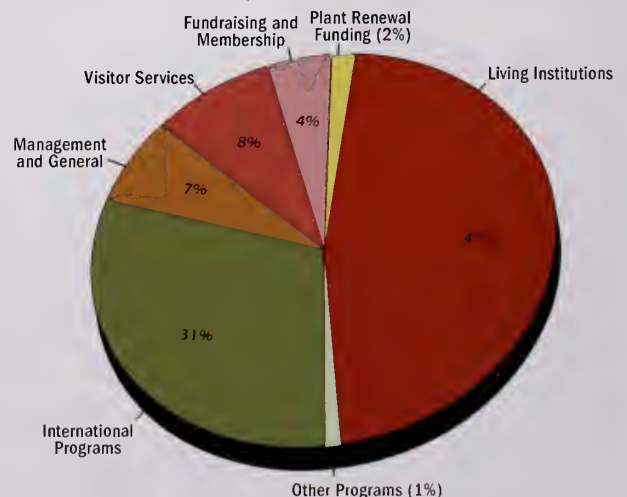
In FY 2002, WCS began a program to set aside a portion of unrestricted income for a facilities renewal fund to support with recurring revenues a portion of the growing infrastructure, equipment, and technology needs of our aging facilities. In 2006, that fund totaled \$2.7 million, making a cumulative total of \$14 million allocated to this purpose over the past five years.

Capital expenditures totaled \$25 million, as WCS continued to implement an ambitious capital construction program to address infrastructure renewal and replacement needs and provide new and reinvigorated exhibits at the Bronx Zoo and the New York Aquarium. This spending was supported by tax-exempt bond proceeds, private gifts, and government support. A new exhibit of African Wild Dogs opened this past spring, and the Bronx Zoo monorail has been upgraded and refurbished. Restoration of the historic Lion House and Astor Court continues, financed by a combination of New York City and WCS funds. Design work proceeded on improvements to

**2006 Operating Revenue  
\$165.5 Million**



**2006 Operating Expenses and Plant Renewal Funding  
\$164.6 Million**





Our financial planning efforts are focused on building a sustainable resource engine to support our efforts to save wildlife and wild lands and connect people to the environment. Fiscal Year 2006 marked the fifth year of improving financial performance for WCS and the third year of positive operating results.



# Operating Revenues and Expenses

YEAR ENDING JUNE 30, 2006  
(COMPARATIVE AMOUNTS FOR 2005)

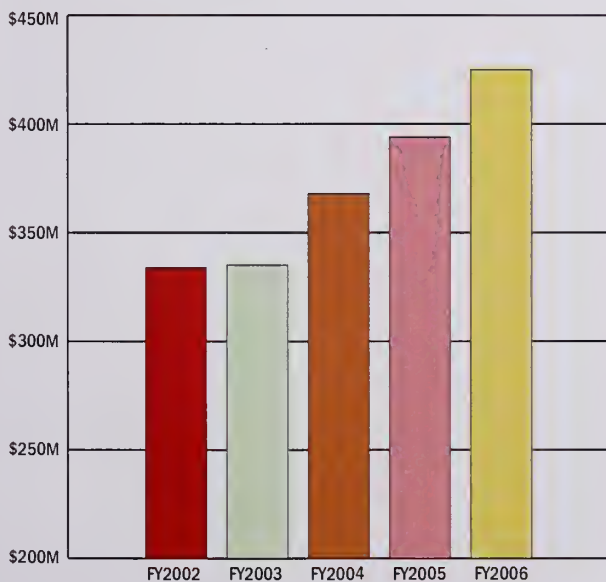
REVENUE	2006	THOUSANDS	2005
Contributed	\$42,682		\$43,986
Membership dues	8,253		8,161
Investment income	17,450		15,665
City of New York	26,831		25,373
New York State	2,413		2,027
Federal agencies	11,630		11,151
Nongovernmental organization grants	5,381		2,959
Gate and exhibit admissions	25,202		21,343
Visitor services	19,290		16,963
Education programs	1,734		1,662
Sponsorship, licensing, and royalties	2,473		2,262
Other	<u>2,176</u>		<u>1,595</u>
<b>Total Revenue</b>	<b>\$165,515</b>		<b>\$153,147</b>
<b>EXPENDITURES</b>			
<b>Program Services</b>			
Bronx Zoo	49,695		45,283
New York Aquarium	12,462		11,088
City Zoos	15,271		13,755
International Programs	50,277		48,241
Wildlife Conservation Magazine	1,169		1,351
Lower Bronx River Habitat Conservation	545		953
Total program services	<u>129,490</u>		<u>120,671</u>
<b>Visitor Services</b>	11,801		10,964
<b>Supporting Services</b>			
Management and general	13,651		11,994
Membership	2,503		2,271
Fundraising	4,545		3,496
Total supporting services	<u>20,699</u>		<u>17,761</u>
<b>PLANT RENEWAL FUNDING</b>	<u>2,700</u>		<u>2,270</u>
<b>TOTAL EXPENSES AND PLANT RENEWAL FUNDING</b>	<u>164,619</u>		<u>152,096</u>
<b>Excess of Revenues Over Expenses and Plant Renewal Funding</b>	<b>\$896</b>		<b>\$1,051</b>

*A copy of the audited financial statement is available upon request.*





**WCS Endowment Growth**



The WCS endowment is invested in a highly diversified portfolio. The portfolio's return was 10.1 percent for FY 2006. The annual return over the last ten years was 11 percent, exceeding by significant margins our performance benchmarks and major market indices.

the New York Aquarium's Main Hall and planned new shark exhibit as well as new big cat exhibits slated for construction at the three City Zoos—Central Park, Prospect Park, and Queens. WCS continued to make investments in telecommunications and information systems to support our worldwide activities.

WCS benefits from a strong balance sheet, with total assets reaching \$768 million. Investment assets, donor pledges of future support, and federal grant receivables increased substantially. Investment assets rose by \$48 million to a market value of \$463 million, including our endowment, which reached \$425 million at the end of the fiscal year. The growth in total investment assets is driven by positive investment return, new gifts to endowment, and the receipt of more private funds supporting WCS programs and capital projects. These funds are invested in a well-diversified portfolio and produced a total return of 10.1 percent for the fiscal year, beating returns in major investment indexes.

Our financial planning efforts are focused on building a sustainable resource engine to support our programs to save wildlife and wild lands and connect people to the environment. Fiscal Year 2006 marked the fifth year of improving financial performance for WCS and the third year of positive operating results, creating financial strength and flexibility to support our mission now and in the future.





## Wildlife Conservation *SAFARI!*

At the Wildlife Conservation *SAFARI!*, WCS's annual Spring Gala, held on May 17 at Central Park Zoo, 475 guests enjoyed cocktails around the Sea Lion Pool. Dinner followed in American West-themed tents, and an exciting live auction was hosted by Sotheby's, Inc. and Jamie Niven. WCS Trustee Howard Phipps, Jr. and Mary Phipps were honored for their generosity and commitment to conservation worldwide. Gala Chairs were Katharina Otto-Bernstein and Nathan Bernstein, Virginia and Warren Schwerin, Allison and Leonard Stern, Ann and Andrew Tisch, Ann and Thomas Unterberg, and Priscilla and Ward Woods.

This page, clockwise from above: Lisa Schiff, WCS Trustee and Honoree Howard Phipps, Jr., Honoree Mary Phipps, WCS Chairman of the Board David T. Schiff; WCS Trustee William Flaherty and Tina Flaherty; WCS Trustee Frederick Melhado and WCS Trustee and Gala Co-Chair Ward W. Woods; Gala Co-Chair Warren Schwerin and WCS Trustee and Gala Co-Chair Virginia Schwerin; WCS Trustee Glenn Close and Uma Thurman.

Opposite page, clockwise from top left: WCS Trustee and Gala Co-Chair Ann Unterberg and WCS Trustee and Gala Co-Chair Allison Stern; Gala Co-Chair Nathan Bernstein and WCS Trustee and Gala Co-Chair Katharina Otto-Bernstein; John F. Thye, Kate Hagerman-Thye, WCS Advisor Pamela Thye, and Renke Thye; WCS Trustee and Gala Co-Chair Allison Stern, Gala Co-Chair Leonard Stern, Marlene Hess, James D. Zirin, Hilary Geary Ross, Wilbur Ross, M. Jessica Ewing, and Steven Silpe; Gala Co-Chair Ann Tisch, Ambassador Dan Gillerman, Janice Gillerman, WCS Trustee and Gala Co-Chair Andrew Tisch.















## Animal Affair

*Animal Affair: A Business Bash at the Central Park Zoo, held on October 4, honored Maurice R. Greenberg, Chairman of C.V. Starr & Co. and The Starr Foundation, for his longtime support and leadership of the New York area and conservation worldwide. More than 250 guests enjoyed cocktails by the Sea Lion Pool and dinner under the stars.*

Opposite, clockwise from top left: WCS Director of Planning and Design Sue Chin, Allison Morrow, WCS Trustee Jonathan L. Cohen, WCS Vice President and Bronx Zoo Director Jim Breheny; WCS Trustee and Honorary Chair Eugene R. McGrath; Corinne Greenberg meeting Nachman the wallaby with Stephanie Derkasch; WCS President and CEO Steve Sanderson, WCS Chairman of the Board David T. Schiff, and Honoree Maurice R. Greenberg; Joey the ferret with Keeper Kim Smith, Christopher Boies, and George Liu.

This page, clockwise from top left: Jenny Anderson and Co-Chair David Boies; Daniel and Elizabeth Esty; Steve Sanderson, David Boies, Corinne Greenberg, Maurice R. Greenberg, WCS Trustee Ward W. Woods; Kim and Bob Bertolini.





## Dinner by the Sea

*Dinner by the Sea*, held on September 21, honored Joshua J. Sirefman, Interim President of the New York City Economic Development Corporation (EDC) and Director for the Mayor's Office of Economic Development and Rebuilding, for his dedication and endless energy in strengthening the City's economics, its cultural institutions, and its parks and waterfronts. Two hundred guests enjoyed cocktails and dinner at The Water Club.

Clockwise from above: WCS Trustee, Chairman of the New York Aquarium Committee, and *Dinner by the Sea* Chair Brian Heidtke, WCS Chairman of the Board David T. Schiff, WCS President and CEO Steve Sanderson, Honoree Joshua Sirefman, New York Aquarium Director Paul Boyle, Senior Vice President of Public Affairs John Calvelli; Gillian Hearst-Shaw and Christian Simonds; Paul Mar torana, Glenn Brown, New York Aquarium Committee Member Trudy Dolley, Robert Depalo, James Dalla Torre; Joshua Sirefman, Brooklyn Borough President Marty Markowitz, Paul Boyle; WCS Trustee Barbara Zucker and Donald Zucker; Brian and Darlene Heidtke.







## Conservation Council

*An Evening at the Central Park Zoo*, an annual event hosted by the WCS Conservation Council, was chaired by Stephanie Borynack, Lauren Kisner, and Christopher Manice. Held on May 17 at Central Park Zoo, the event supports WCS's local and global wildlife conservation efforts. More than 900 guests gathered for cocktails, buffet dining, and dancing into the early morning hours.

Clockwise from top left: Conservation Council Member Kate Criner and Charles Smith; William Cooling, Conservation Council Member Charles Carson, Jr., Philip Gaucher, and Philip Hillier; Conservation Council Members Anne and George Baker; Marisa Arredondo, Tatiana Papanicolaou, and Conservation Council Member Harrison T. LeFrak; Conservation Council Co-Chair Stephanie Borynack and Ames Brown.







## Explorers' Party

The *Explorers' Party*, which raises funds for WCS Education Programs, was co-chaired by Celeste Boele and Ann Coley. Hosted by the *Explorers' Party* Committee at Central Park Zoo on May 24, the event welcomed more than 1,000 guests with fun food, live music, and creative crafts, activities, and games for kids of all ages.

Clockwise from top left: WCS Chairman of the Board and Grandparents Committee Chair David T. Schiff, Wyatt Schiff, Anna Schiff, Karenn Gore Schiff, and Andrew N. Schiff; Deborra-Lee Furness and Hugh Jackman; (clockwise, from top left) *Explorers' Party* Committee Member Geoffrey Coley, *Explorers' Party* Committee Co-Chair Ann Coley, Caspar Boele, Clio Boele, *Explorers' Party* Committee Co-Chair Celeste Boele, Calypso Boele, Cece Boele, Gigi Coley, Kassie Coley, Niki Coley; Stephen Moon, *Explorers' Party* Committee Member Hee-Jung Moon, David Moon, Connor Hennessey, Ryan Hennessey, Patron Chair Jackie Hennessey, and Owen Hennessey.







## Recent Events

Clockwise from top left: WCS Trustee Merritt Paulson, Heather Paulson, and Dave the red kangaroo at the Bronx Zoo Zebra House; Isabella Rossellini and WCS Trustee Jane Alexander at the *State of the Wild* book launch, November 29, 2005; WCS Director of Planning and Design Sue Chin, Yuko Brumm, and James E. Brumm at *The Bronx Zoo's Lion House: Behind the Scenes of a Historic Transformation* on June 15, 2006; WCS Trustee Barbara Zucker, WCS Trustee Dailey Pattee, and WCS Senior Vice President and General Director of Living Institutions Richard L. Lattis at the *Bronx Zoo Bug Carousel Opening* on July 13, 2005; WCS Trustee Eleanor Briggs and Jayni Chase at the *Tonle Sap Book Launch* on January 18, 2006.



## BEST FRIENDS AND BENEFACTORS

With deep appreciation, the Wildlife Conservation Society acknowledges the extraordinary support of the following donors. The cumulative total contributed by each of these individuals, foundations, and corporations has significantly strengthened our efforts to save wildlife and wild lands. We are enormously grateful for their enlightened and inspiring generosity. (\* denotes a WCS Conservation Patron)

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The Wildlife Conservation Society thanks the following donors for their generous contributions, made between July 1, 2005 and June 30, 2006. These gifts provided vital funding for the programs and activities—in New York City, across the United States, and around the world—that support our mission to save wildlife and wild lands. (\* denotes a WCS Conservation Patron)

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**Below, at the *Tonle Sap Book Launch*: back row, WCS  
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Dr. George Schaller, WCS President and CEO Steve  
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WCS Trustee Eleanor Briggs.**



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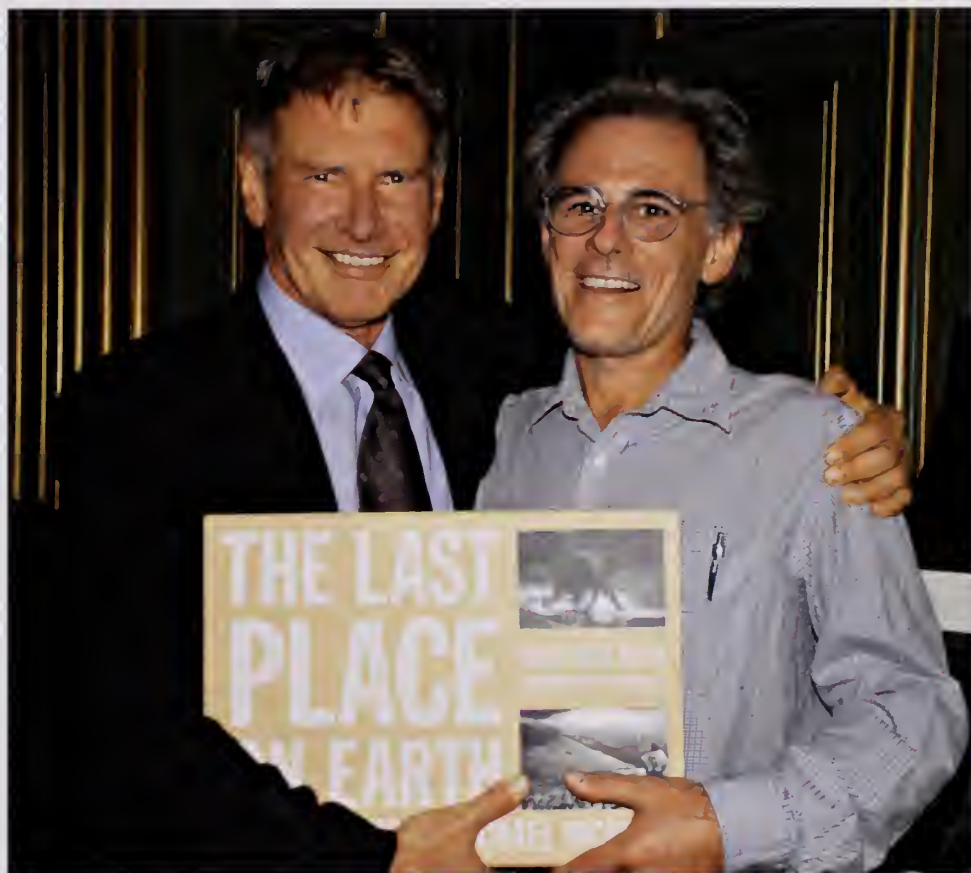


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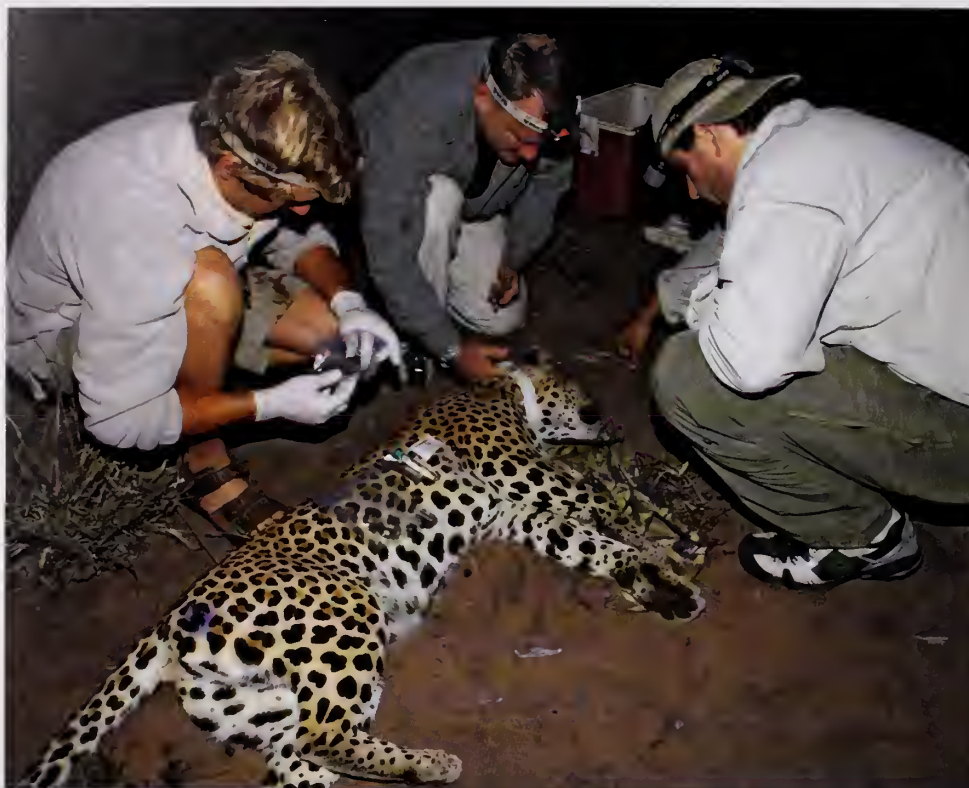
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# wcs staff and associates

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Gail Sheldon, Chief of Staff

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James J. Breheny, Vice President and Director, Bronx Zoo  
Robert A. Cook, Vice President and Chief Veterinarian  
John A. Gwynne, Vice President and Chief Creative Officer  
Denise McClean, Assistant Director, Administration  
Marion Merlino, Executive Assistant  
Michelle Midea, Secretary  
Beverly Moss, Secretary  
Thea Feldman, Creative Writer

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Steve Johnson, Manager, Library  
Robert Olley, Information Services Librarian  
Eva Raj, Domingo Santiago, Library Assistants

### Environmental Compliance

Brenda Burbach, Environmental Compliance Specialist

### WILDLIFE HEALTH SCIENCES

Robert A. Cook, Vice President and Chief Veterinarian  
Joanne Valletta, Office Manager  
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Deborah F. Harris, Pathology & Clinical Records Secretary

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Paul Calle, Bonnie Raphael, Senior Veterinarians  
Stephanie James, Associate Clinical Veterinarian  
Robert Moore, Assistant Clinical Veterinarian  
Kristine Smith, Clinical Resident  
Heidi Zurawka, Pfizer Clinical Resident  
Pamela Manning Torres, Senior Veterinary Technician  
Karen Ingerman, Peter Psillas, Justin Nowowiejski, Veterinary Technicians  
Dolores Sanginito, Clinical Secretary  
Pathology  
D McAloose, Department Head, Pathology  
Martin Busch, Julie White, Associate Pathologists

**Assistant Zoo Park Maintainer Michael Williams and Gardner David Hyde gather spring flowers for planting around the Bronx Zoo grounds.**

Alfred Ngbokoli, Laboratory Supervisor  
Daniel Friedman, Histotechnician  
Patricia Walsh, Pathology Technician

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Lisa Starr, Manager  
Angela Yang, Program Coordinator  
Veronica Greco, Veterinary Technician  
Damien Joly, Wildlife Epidemiologist  
Steven Osofsky, Senior Policy Advisor/Wildlife Health  
Issa Bedjabaga, Gabon Laboratory Technician  
Martin Gilbert, S.E. Asia Field Veterinarian; Michael Kock, Patricia E. Reed, Africa Field Veterinarians; Marcela Uhart, Latin America Field Veterinarian; Rodolfo Nillar Gutierrez, Bolivia Field Veterinarian

Carolina Marull, Argentina Wildlife Health Fellow  
Zorine Baudelaire Nkouantsi, Alaine Ondzie, Congo Wildlife Health Specialists,

Erika Alandia, Sonia Matijasevic, Community Outreach Veterinarians

Kathy Quigley, Western States Veterinary Coordinator

### Animal Commissary

Joseph Briller, Manager, Commissary  
Moruf Egbo, Michael Marano, Senior Wild Animal Keepers  
Alfredo Hernandez, Wild Animal Keeper John Andrew King, Zoo Park Maintainer  
Michael Cruz, Wild Animal Keeper

Quincy Banks, Guillermo Guzman, Assistant Zoo Park Maintainers

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Dorothy M. Keane, Nurse Manager  
Karen Klein, Nurse

### Pest Control

Anthony Boodoo, Manager, Pest Control  
Patrick Doran, Joseph White, Certified Applicators

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John Gwynne, Vice President and Chief Creative Officer  
Susan Chin, Director, Planning & Design  
Eileen Cruz-Minnis, Assistant Director, EGAD Administration  
Rumit Mehta, Program Administrator  
Patricia White, Executive Assistant  
Denise Delgado, Department Assistant  
Anne Rice, Project Assistant  
Matilda Mora, Clerk

### Architecture, Exhibit Design and Production

Dex Ott, Director, Design Management  
Walter Deichmann, Creative Director, Exhibits  
Jon Dohlin, Philip Drew, Brian Morrissey, Atul Patel, Project Managers  
Shane LeClair, Assistant Project Manager  
Sara Tsiropinas, Junior Architectural Designer  
Jennifer Horn, Jennifer Lee, Senior Landscape Designers  
Tonya Edwards, Junior Landscape Designer

Gary Smith, Assistant Director, Exhibit Production

Matthew Aarvold, Assistant Supervisor, Exhibit Production  
Derek Haffar, Senior Exhibit Specialist

Erica Browne, Christian John Dallett, Brian Donnelly, Carolyn Fuchs, James Michael Prettyman, Alicia Purdy, Deborah Simon, Drew Sokol, Michael Sukys,

Exhibit Specialists

Ruth Marshall, Exhibit Sculptor

### Interpretive Programs, Graphic Design and Production

John Fraser, Director, Interpretive Programs  
Sarah Hezel, Studio Manager  
Zipora Fried, Kimio Honda, Sharon Kramer Loew, Creative Directors, Graphics  
Richard Orlosky, Senior Graphic Designer  
Nancy Fischer, Tracy Gromek, Laura Gunther, Vanah Harris, Assaf Meron, Joshua Weitzman, Graphic Designers  
Sonal Bhatt, Manager, Interpretive Programs  
Jessica Bicknell, Interpretive Programmer  
Sarah Gruber, Exhibit Developer  
Sarah Werner, Media Coordinator  
Paul Heyer, Manager, Exhibit Production  
Nelson Then, Manager, Graphic Production and Computer Systems  
Kim Wagner, Graphic Production Coordinator  
Christopher Maune, Supervisor, Graphic Production  
Robert Miceli, George Oberhofer,





William Rios, Sebastian  
Saglimbeni, Graphic Specialists

#### Global Design

Katherine Lemcke, Project  
Coordinator

#### BRONX ZOO

James Breheny, Vice President and  
Director

Linda Wied, Executive Assistant

#### Mammalogy

Patrick Thomas, Curator, Mammals

Colleen McCann, Curator, Primates

David Powell, Assistant Curator,  
Hoofstock

Rebecca Chapnick, Office Manager

Marietta Kalk, Claudia Wilson,  
Collection Managers

Michael Lensch, Joseph Mahoney,  
Supervisors

Michael Gormaley, Nicole Rella,  
Bryan Robidas, Gina Savastano,  
Assistant Supervisors

Robert Terracuso, Kris Theis,  
Primary Wild Animal Keepers

Ralph Aversa, Michelle Blatz, Kitty  
Dolan, Gilbert Gordian, Jr.,  
Loraine Hershonik, Florence  
Klecha, Kathleen MacLaughlin,  
Douglas Mase, Joan McCabe-  
Parodi, Jeffrey Munson, Karen  
Napolitano, Jason Rowe, Nichole  
Shelmidine, Gerard Stark, Jose  
Vasquez, Martin Zybura, Senior  
Wild Animal Keepers

Avril Armstrong, Adele Barone,  
Kathleen Boyce, Travis Brady,  
Anthony Buffill, Wendy  
Canino, Francisco Cruz,  
Katherine D'Andrea, Emily  
Davidson, Robert Dempsey,  
Brian DiGirolamo, Juliet  
Elkins, Glenn Ferguson, David  
Fernandez, Carlos Flores, Joel  
Forgione, Margaret Franchi,  
Nicole Furina, Mary Gentile,  
Amy Golden, Mary Gremler,  
Daphne Guzman, Gregory Heim,  
Carol Henger, Maria Hertneck,  
Danielle Hessel, Hulya Israfil,  
Kenneth Jones, Vanessa Jones,  
Elena Kaplan, Brenda Kramer,  
Christa Kugler, Ann McCaffrey,  
Joanne McGillycuddy, Michelle  
Medina, Elizabeth Metzger,  
Lindsay Mikus, Elizabeth Mills,  
Katie Mokkosian, Jessica Moody,  
Brandon Moore, Douglas Morea,  
Keri Nugent, Kristin Patti,  
Rebecca Pearce, Jonathan Perez,  
Noel Perriello, Hope Pinckney,  
Brian Putman, Phillip Reiser,  
Nancy Rogers, Chris Salemi,  
Andrea Spence, Sabrina Squillari,  
Monika Stroeber, Anneke van  
Renesse, Cathy Vitale, Kelly  
Wallis, Spencer Wilhelm, David  
Wreck, Wild Animal Keepers

Matthew Vara, Supervising Zoo  
Park Maintainer

James Musano, Assistant Zoo Park  
Maintainer

#### Ornithology

Christine Sheppard, Curator,  
Ornithology

Nancy Clum, Assistant Curator

Mary Evans, Departmental Assistant  
Marcia Arland, Collection Manager  
Mark Hofling, Assistant Supervisor  
Mary Iorizzo, Assistant Supervisor  
Chad Seewagen, Ornithology Intern

Patricia Cooper, Nancy Gonzalez,  
Emily Stevinson, Susan  
Leiter, Yvetta Pokorny, Paul  
Zabarauskas, Alana O'Sullivan,  
Jeremy Sanders, Brian Tierney,  
Gigi Giacomara, Senior Wild  
Animal Keepers

Kristi Bruce, Jeannine Correa,  
Margaret Deeney, Myra  
Dremeaux, James Gottlieb,  
Tasha Hook, Ken Huth, Michael  
Houlihan, Maria Maust, Tim  
Mohr, Trina Puglia, Ramsay  
Thom, Juan Romero, Debra  
Wolfe, Wild Animal Keepers

#### Herpetology

John Behler, Curator, Herpetology

Gail Bonsignore, Supervising  
Secretary

William Holmstrom, Collection  
Manager

Paul Kmiotek, Senior Wild Animal  
Keeper

Joseph Abene, Melissa Mohring,  
Alyssa Borek, Brandon Casey,  
Wild Animal Keepers

#### Special Animal Exhibits: Children's Zoo, Butterfly Garden, and Animal Rides

Suzanne Daley, Operations  
Supervisor

Ruth Iannuzzi, Diana Tancredi,  
Supervisors

James Dauterman, Stephanie  
Derkasch, Shakira Paula, Diana  
Belich, Assistant Supervisors

Patricia Ortiz, Luke Torres, Jennifer  
Oi, Melanie Lumba, Mary Bynon,  
Kim Smith, Wild Animal Keepers

#### Animal Management Services

Nilda Ferrer, Associate Curator and  
Registrar

Helen Basic, Anne Rockmore,  
Animal Records Specialists

Mariluz Vazquez, Data and  
Technical Support Assistant

Carmen Guzman, Animal Shipping  
Coordinator

#### Security

Edward Cooney, Manager, Security

Raynor Mattson, Assistant Manager

Jeff Grahn, Kennedy Samuels,  
Supervisors

Luis Barreto, Steven Carr, Steven  
Pippa, Gregory Upshaw, James  
Williams, Zoo Park Maintainers

Haseeb Baksh, Jimmy Barreto,  
Ivonne Collazo, Weston Hill,  
Barbara Laureano, Ceaser  
Montenegro, Bernardo Nelson,  
Jesus Padilla, Maribel Perez,  
Robert Rosario, Donald  
Thompson, Alexandre Vazquez,  
Ralph Zamboli, Assistant Zoo  
Park Maintainers

#### Maintenance

Frank Suarino, Assistant Director

Wayne Harris, Park Foreman

Johnnie Ferreira, Supervising Zoo  
Park Attendant

Anthony Corvino, Supervising Zoo  
Park Maintainers

Raquel Camacho, Office Manager

Juan Semidei, Jr., John Tralongo,  
Zoo Park Maintainers

Rafael Adorno, Joel Annuziato,  
William Castro, Jr., Orlando  
Fiuroa, Gabriel Gomez, Santos  
Gonzalez, Ortniel Gulley,  
Mary Martin, Jose Raul Rivera,  
Michael Sharbori, Justin Smith,  
Assistant Zoo Park Maintainers

Maria Maldonado, Senior Attendant

John Bruno, Jr., Migdalia Cordero,  
Peter Drosopoulos, Maria  
Estrada, Roberto Figueroa,  
Jose A. Garcia, Jeanette Goines,  
Gilbert Green, Porfirio Gutierrez,  
Carmen Guzman-Caraballo,  
Keith Harris, Demond Jones,  
Sonia Kalmanowitz, Louis Landi,  
Carmen Montalvo, Manuel  
Moura, Mildonia Nunez, Jose  
Palacios, Gerard Palinkas,  
Raymond Quaglia, Niurka  
Ramos, Marta Rivera, Pedro  
Velez, Eduardo Vidal, Raymond  
Zelenka, Attendants

Manuel Garcia, Supervising Motor  
Vehicle Operator

George Izquierdo, Luigi Marricco,  
Ralph Maston, Motor Vehicle  
Operators

#### Horticulture

Ray Oladapo-Johnson, Curator

Wayne Bourdette, Manager

Gregory Smith, Supervisor

James Coelho, Stuart Goldstein,  
Robert Herkommer, David Hyde,  
Juan Albert Peralta, Gardeners

James Burns, Paul Fialkovic,  
Anthony Quaglia, David  
Rosenthal, Zoo Park Maintainers

Kevin Bermeo, Veronica Kreitzer,  
Ivonne Lopez, Lloyd Pearson,  
Assistant Zoo Park Maintainers

#### OPERATIONS

Kenneth Hutchinson, Director

Michael Santomaso, Manager

Paul Skarbowski, Project Manager

Jon Dohlin, Project Manager

Nora Ramos, Operations  
Administrator

Laurel Toscano, Administrative  
Assistant

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Jose Baez, Parmanand Kesraj,  
Anthony Laino, Thomas  
Reilly, Louis Scandole, Michael  
Scott, Marconi St. Hill, Robert  
Stillwell, Supervising Zoo Park  
Maintainers

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Bigone, James Byrne, Benedetto  
Cardillo, Francis Cushin, Joseph  
Corry, Lawrence D'Erasmo,  
Robert Gonzalez, Alfred  
Hart, John Illenye, Gregory  
Kalmanowitz, Patrick Madera-  
Bonet, Roopnarine Maharaj,  
Jose Martinez, Ramon Mendoza,

Alison Modeste, Winston  
Newton, Nicholas Perrone,  
Nelson Prado, Robert Santarelli,  
Renzo Scarazzini, Edward  
Scholler, Nathaniel Torres, Carlos  
Year, Zoo Park Maintainers

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Michael Henry, Manager, Electric  
Services

Alfred Jensen, Supervisor

Mark Anderson, Dave Bailey,  
Farouk Baksh, Hervan Brown,  
Edwin Otero, Keith Reynolds,  
Zoo Park Maintainers

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Phyllis Fritz, Assistant Director

Al Clapsaddle, Manager of  
Admissions Administration

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Ivelisse Velasquez, Supervisors

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Mildred Vargas, Ticket Agents

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Noela Cruz, Michelle Silva,  
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Chris Filomio, Manager

Kevin Franqui, Assistant Manager

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Franqui, Maryann Ruberto, Joe  
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Rebecca Williams, Project Assistant

Joan Shovlin, Project Assistant

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and Director of Animal  
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Paul Loiselle, Associate Curator,  
Freshwater Fish

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Behavioral Husbandry

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Sal Puglia, Ellen Spencer, Jessica  
Trantham, Laura Murphy,  
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Pamela Haynes, Marisa Petersen,  
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Patricia Toledo, Assistant Laboratory Technician

Mary Messing, Administrative Assistant, Librarian

Dick Blankfein, Dive Safety Officer, Volunteer Dive Program; Animal Husbandry Volunteer Coordinator

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Dennis Ethier, Director, Operations, Facilities, and Exhibit Fabrication

Melvin Pettit, Manager, Facilities

John Moore, William Sheehan, David Sheurich, Michael Tine, Supervising Zoo Park Maintainers

Michael Budney, Richard Bullen, Richard DiStefano, Raul Domenech, Alfred Escalera, Michael Facciolo, Winstrol Hosein, Timothy Magee, Kenneth Prichett, Ralph Ramos, Fitz-Albert Reynolds, Tony Vargas, Dennis Walsh, Zoo Park Maintainers

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Tonya Thomas, Clerk

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Carlos Martinez, Supervisor

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Florence Goldberg, Ticket Agent

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Luz M. Diaz, Administrative Assistant

Noemi Medina, Receptionist

Sandra Alcosser, Poet-in-Residence

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Yula Kapetanakis, Assistant Curator, Animals

Bruce Foster, Collection Manager

Anthony Brownie, Supervisor

Charles Braun, Heather Gordon, Robert Gramzay, Kristine Keating, Senior Wild Animal Keepers

Celia Ackerman, Michelle Acosta, Richard Camilli, Priyangani De Soyza, Tumeca Gittens, Alexander Humphreys, Luis Jimenez, Raymond Maguire, Amaury Quiñones, John Roderick, Gretchen Stoddard, Keith Walker, Wild Animal Keepers

David Autry, Life Support Systems Technician

Bernadine Leahy, Senior Veterinary Technician

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Bob Gavlik, Director

Mong Lee, Assistant Manager

Edwina Jackson, Secretary

Michael Nedd, Marlon Raghir, Supervising Zoo Park Maintainers

Arkady Gutman, Alistair

Johnson, Jose Torres, Zoo Park Maintainers

Wayne Martin, Supervising Attendant

Santa Alequin, Joshua Doval, Crystal Kinlaw, Audrey McAllister, Geraldo Peralta, Tyrone Pinkney, Johnny Salcedo, Lakisha Terry, Mark Veerapen, Attendants

## Horticulture

Todd J. Comstock, Horticulturist

## Security and Admissions

Stephen Carey, Manager

Frank Cangiarella, John Geist, Assistant Managers

Fitzroy Neufville, Zoo Park Maintainer

John Bohan, Felito Cuevas, Carlton Davidson, Alberto Gonzalez, John Joseph, Marilyn Maldonado, Frederick Miller, Nestor Morera, Jaime Pagan, Everton Pearson, Rob Sutherland, Christopher Todd, Ramanen Veerapen, Assistant Zoo Park Maintainers

Sonia Colon, Joanna Kittler, Sookiah Maharaj, Celvis Rock, Ticket Agents/Cashiers

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Don Moore, Director

Betty Allen, Senior Secretary

## Animal Programs

Patricia Cole, Curator, Animals

Mark Halvorsen, Supervisor

Dominick Dorsa, Assistant Supervisor

Kristen Chew, Jennifer Skelley, Frances Verna, Senior Wild Animal Keepers

Victoria DiPaolo, Tumeca Gittens, Scott Heindl, Astra Kalodukas, Denielle Muoio, Dennis Maroulas, Daniel Matos, Atu Marshall, Nekia Seaherry, Lizzette Oliveras, Andrea White,

Wild Animal Keepers

Karen Wone, Veterinary Technician  
Debbie Dineman-Keim, Volunteer Coordinator

Karen Tingley, Education Curator  
Emily Pinkowitz, Outreach Coordinator

## Operations and Maintenance

Arek Krasuski, Manager

Evelyn Alexander, Secretary

Oscar Ceron, Norbert Wescott, Zoo Park Maintainers

Reginald McKenzie, Selwyn Ramnaidu, Chaitram Singh, Assistant Zoo Park Maintainers

Garvin Chankoo, Elizabeth Chotalal, Luis Cruz, Donell Gatling, Eisha Johnson, Ernesto Ortiz, Wayne Peters, John Richards, Aretha Thompson, Attendants

## Horticulture

James Russell, Assistant Horticulturist

## Security and Admissions

John Balestrieri, Manager

John Brooks, Assistant Manager  
David Evans, Supervisor

Wilbert Barton, Milton Cameron, Harold Davis, Paul DeJesus, Rogelio Dickens, Lemmuel Brummell, Michael Fazzino, Vincent Ferguson, Patrick Osagie, Romualdo Vasquez, Milton Williams, Assistant Zoo Park Maintainers

Joanne Carrillo, Lola Chung, Jennifer Soto, Suheilee Vasquez, Ticket Agents

## QUEENS ZOO

Rohin Dalton, Director

## Animal Programs

Scott Silver, Curator

Paulette Soto, Administrative Assistant

Donna-Mae Graffam, Supervisor  
Mark Hall, Assistant Supervisor

Marcy Farley, Marcos Garcia, Dana Vasquez, Raul Vasquez, Senior Wild Animal Keepers

Heath Bruscatto, Kelly Carman, Sylvia Dlugokenski, Barbara Fung, Ira Goldman, James Luedtke, Susan Makower, David Morales, Samaly Pastor, James Putnam-Fthimiou, Erin Rosebrock, Wild Animal Keepers

Nina Palmer-Sweeney, Veterinary Technician

**From left to right: Public Affairs Event Planning Associate Manager Anthony Petrone, Manager Media Partnerships Natalie Cash, and Associate Manager Online Services Jose Seranno**





#### Operations and Maintenance

Jeffrey Blatz, Assistant Manager  
Tom McGrath, Supervisor  
Rafael Genao, Fernando Molina, Bo Yang Tian, Eugene Texeira, Zoo Park Maintainer, Orlando Colon, Assistant Zoo Park Maintainer  
Carol White, Supervising Attendant  
Krishna Dookran, Myriam Martinez, Carlos Valentin, Angustella Zeko, Attendants

#### Security and Admissions

John White, Assistant Manager  
Ken Norris, Supervisor

Paul Fairall, Leonard Golino, Anthony Mark, Garfield McEachron, Carlton Nelson, Rafael Nieves, William Rosado, Dhando Shankar, Larry Saunders, Allan Taylor, Garvin Chankoo, Assistant Zoo Park Maintainers

Tina Anderson, Joanne Crespo, Alicia Prashad, Ticket Agents

#### ENVIRONMENTAL EDUCATION

Annette Berkovits, Senior Vice President, The Chauncey Stillman Chair in Wildlife Education

#### BRONX ZOO EDUCATION

Donald C. Lisowy, Curator

Mary DeRosa, Manager, Support Services

M. Kathryn Langworthy, Divisional Manager, Administration

#### General Audience and School Group Programs, Graduate Internships, Teacher Training, and Curriculum Development

Thomas Naiman, Director, Curriculum Development and International Education Programs

Ann Robinson, Director, National Programs

Jennell Ives, Assistant Director, National Programs

Sydell Schein, Manager, Program Services

Lee Livney, Manager, Federal Grants & Distance Learning Program

Nalini Mohan, International Teacher Trainer

Ana Laborde, Ian Signer, International Teacher Trainers/ Curriculum Specialists

Jennifer Hewson, Shellye Valauskas, Teacher Trainers

Claire Deroche, Coordinator, Friends of the Zoo

Ilyssa Gillman, Manager, Program Development and Instruction

Ronald Griffith, Senior Instructor

Robert Getz, Secondary Instructor

Joanna Cagan, Katie Doherty, Gabrielle Kushner, Kim Van Mourik, Christopher MacKay, Elementary Instructors

Erin Prada, Distance Learning

Instructor  
Kathleen LaMattina, Education Programs Liaison

Cayra Carroll, Divisional Administrative Assistant

Patricia Berry, Administrative Assistant

Yvonne Morgan, Program Registrar

Jeanine Silversmith, Project Advisor, Teens for Planet Earth Program

Judith Unis, Project Coordinator, Teens for Planet Earth Program; Coordinator, Project PRISM

#### NEW YORK AQUARIUM EDUCATION

Dr. Merryl Kafka, Curator

Lisa Mielke, Assistant Curator

Robert Cummings, Senior Instructor

Michelle Vermonty, Volunteer Coordinator

Melissa Carp, Janipher Chan, Instructors

Gary Holliday, Coordinator, Outreach Services

Maria Zampella, Secretary

Polly Catanzaro, Senior Reservationist

#### CENTRAL PARK ZOO EDUCATION

Robert Sikora, Curator

Jonathan Eilers, Senior Instructor, Theater Coordinator

Nicole Greevy, Bonnie Bromberg, Performing Instructors, Onsite Coordinators

Alison Saltz, Performing Instructor, Offsite Coordinator

Jane Donnelly, Volunteer Coordinator

Miriam Hernandez, Secretary and Registrar

#### PROSPECT PARK ZOO EDUCATION

Karen Tingley, Curator

Audrey Lucas, Community Outreach Coordinator

#### QUEENS ZOO EDUCATION

Thomas Hurtubise, Curator

Monica Negron, Secretary and Registrar

Lauraine Merlini, Community Outreach Coordinator

#### INTERNATIONAL CONSERVATION

John Robinson, Executive Vice President for Conservation and Science, Joan O. L. Tweedy Chair in Conservation Strategy

Josh Ginsberg, Vice President, Conservation Operations

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**Bronx Zoo Mammal Department Keeper Avril Armstrong with baby Asian small-clawed otters**

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**Senior Keeper Kristin  
Chew with Prospect  
Park Zoo's red pandas  
Mei Lin and Lum**





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## BEHAVIOR, ETHOLOGY, AND BEHAVIORAL ECOLOGY

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# awards, facts, and credits

## AWARDS

The Bronx Zoo's Lion House conversion was a winner in The Green Building Competition for New York City, a competition sponsored by the U. S. Environmental Protection Agency and New York City Department of Environmental Protection. The project, submitted by WCS and FXFOWLE Architects, integrates an historic building with contemporary design and green technologies. The adaptive-reuse project will house the new *Madagascar!* exhibit, a multi-purpose space, and animal holding areas. The Lion House is the first New York City landmark rated as gold Leadership in Energy and Environmental Design and is part of the NYC Department of Design and Construction's sustainable design pilot program. Innovative design elements, such as skylights that cover 8,500 square feet, allow for maximum natural light for plants and minimum heat gain, translating into a 57-percent savings in energy costs over code.

The WCS Education Department received the Association of Zoos and Aquariums's top Education Award for its Girls for Planet Earth program.

WCS was presented with the NYSAE 2006 Professional Recognition Award/Cyber Space Award for the Web site's immediacy of overview, ease of navigation, aesthetics, consistency, timeliness of content, internal search capabilities, usefulness, intractability, originality, and Internet vision.

Elizabeth Bennett, director of WCS Hunting and Wildlife Trade Program, received the Leila Hadley Luce Award for Courage awarded by Wings WorldQuest for her work in the forests of Asia and her efforts to save wildlife worldwide.

The Explorers Club presented its Explorers Medal, the club's highest honor, to J. Michael Fay, National Geographic Explorer-in-Residence and WCS conservationist, who spent 15 months flying a small plane across Africa to record environmental data.

Nyawira Muthiga, coordinator of the WCS Western Indian Ocean Marine Program, received the Eve Women of the Year Award in the Conservation category. The Eve Women of the Year Awards are organized by Eve magazine and recognize the achievement of women in Kenya. Muthiga also received the National Geographic Society/Howard Buffet Award for Leadership in African Conservation.

Javier Simonetty, WCS-Chile scientific advisor, received the Distinguished Service Award from the Society of Conservation Biology in recognition of the role he has played in building capacity in conservation in Latin America.

In the International Conservation Latin America Program, Carlos García-Robledo, Gustavo Kattan, Carolina Murcia, and Paulina Quintero-Marin received the 2006 Biotropica Award for Excellence in Tropical Biology and Conservation, awarded by the Association for Tropical Biology and Conservation and the Editorial Board of Biotropica.

## ANIMAL CENSUS

### Bronx Zoo

Mammals	species	4 births
2,456 animals of 137 species	Birds	Birds
1,555 births	15 animals of 1 species	197 animals of 36 species
Birds	Reptile and Amphibians	1 hatching
875 animals of 182 species	21 animals of 9 species	Reptiles
109 hatchings	Fish	44 animals of 7 species
Reptile and Amphibians	2,231 animals of 220 species	
792 animals of 146 species	Invertebrates	
369 births and hatchings	8,548 animals of 107 species	

### Special Animal Exhibits,

#### Bronx Zoo

Mammals	752 animals of 22 species
228 animals of 38 species	480 births
28 births	Birds
Birds	259 birds of 50 species
153 animals of 38 species	38 hatchings
4 hatchings	Reptiles and Amphibians
Reptile and Amphibians	779 of 44 species
199 animals of 37 species	

### New York Aquarium

Mammals	83 animals of 24 species
25 animals of 6 species	

### Central Park Zoo

Mammals	752 animals of 22 species
480 births	Birds
Birds	259 birds of 50 species
38 hatchings	Reptiles and Amphibians
779 of 44 species	

### Queens Zoo

Mammals	83 animals of 24 species
25 animals of 6 species	

### Prospect Park Zoo

Mammals	110 animals of 22 species
16 births	Birds
Birds	61 animals of 30 species
6 hatchings	Reptiles and Amphibians
227 animals of 54 species	20 births and hatchings

### Total WCS Census

17,875 animals of 1,210 species
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## OPERATING EXPENSES

Bronx Zoo	\$49,695,000
New York Aquarium	12,462,000
City Zoos	15,271,000
International Conservation	50,277,000
Wildlife Conservation Magazine	1,169,000
Lower Bronx River	
Habitat Conservation	545,000
Total Program Expenses	\$129,490,000
Visitor Services	11,801,000
Supporting Services	20,699,000

### Total

Wildlife Conservation Society	\$161,890,000
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## ATTENDANCE AT WCS FACILITIES

Bronx Zoo	1,967,033
Congo Gorilla Forest	667,594
Children's Zoo	329,599
Zoo Shuttle	334,952
Monorail	447,609
Skyfari	386,448
Butterfly Garden	381,209
Carousel	419,473
New York Aquarium	751,993
Central Park Zoo	1,030,741
Prospect Park Zoo	235,404
Queens Zoo	203,545
Total WCS Attendance	4,188,716

## MEMBERSHIP AND MAGAZINE

Members	83,013
Wildlife Conservation circulation	104,493

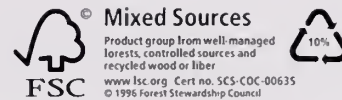






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**Above: music and bird song; below: Island Press Executive Editor Jonathan Cobb, WCS Institute Vice President and Director Kent Redford, and WCS President and CEO Steve Sanderson; opposite: a hatchling Parker's snake-necked turtle**



## RECOMMENDED FORM OF BEQUEST

The Trustees of the Wildlife Conservation Society recommend that for estate planning purposes, members and friends consider the following language for use in their wills: “To the Wildlife Conservation Society, a not-for-profit, tax-exempt organization incorporated in the State of New York in 1895, having as its principal address the Wildlife Conservation Society, 2300 Southern Boulevard, Bronx, New York 10460, I hereby give and bequeath \_\_\_\_\_ for the Society’s general purposes.”

In order to help WCS avoid future administration costs, it is suggested that the following paragraph be added to any restrictions that are imposed on a bequest: “If at some future time, in the judgment of the Trustees of the Wildlife Conservation Society, it is no longer practical to use the income or principal of this bequest for the purposes intended, the Trustees have the right to use the income or principal for whatever purposes they deem necessary and most closely in accord with the intent described herein.”

If you wish to discuss the language of your bequest with a member of the WCS staff, please be in touch with the Planned Giving Office at 718-220-6894.

For information on how you can support the Wildlife Conservation Society, please call our Development Department at 718-220-5090. A copy of this annual report may be obtained by writing to the Office of the Chairman, Wildlife Conservation Society, 2300 Southern Boulevard, Bronx, New York 10460. In addition, a copy of WCS’s annual filing with the Charities Bureau of the Office of the New York State Attorney General may be obtained by writing to the Charities Bureau, New York State Attorney General’s Office, 3rd Floor, 120 Broadway, New York, New York 10271.



WILDLIFE CONSERVATION SOCIETY

2300 Southern Boulevard ■ Bronx, NY 10460

[www.wcs.org](http://www.wcs.org)